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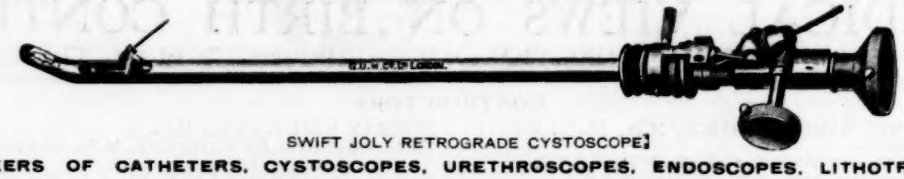

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The Lessons OF RARE MALADIES.

The Annual Oration delivered before the Medical Society of London on May 21st, 1928,

BY SIR ARCHIBALD GARROD, D.M., K.C.M.G., LL.D., F.R.S.

TO-DAY, when the echoes of his tercentenary have scarcely died away, and the work of William Harvey is in all our minds, it is fitting that I should take, as the text of my discourse, some words of his which appear to me to state my thesis better than had ever been done before, or has been done by any more recent writer. The passage to which I refer is contained in a letter which Harvey wrote, only six weeks before his death, to a Dutch physician, Dr. Vlackveld of Haarlem, who had asked his opinion upon an unusual specimen. Translated, it runs as follows:—

"It is even so—Nature is nowhere accustomed more openly to display her secret mysteries than in cases where she shows traces of her workings apart from the beaten path; nor is there any better way to advance the proper practice of medicine than to give our minds to the discovery of the usual law of Nature by careful investigation of cases of rarer forms of disease. For it has been found, in almost all things, that what they contain of useful or applicable is hardly perceived unless we are deprived of them, or they become deranged in some way."

There are many of us to whom a scientific research appeals in proportion to its practical utility, and others for whom a discovery loses much of its charm when applied to practical uses. So, too, I take it, there have always been, and always will be, many members of our profession to whom the study of those common diseases which are of so great practical importance, and to cope with which is the daily task of the medical man, make the strongest appeal, whereas for others, who form but a small minority, the investigation of rare maladies has a special attraction.

Undoubtedly the collector's instinct is very widespread, and in early life is almost universal. To form a good collection of stamps, birds' eggs, or butterflies is the ambition of most boys; and such ambitions persist into later life, although the field of the collector may change. With this instinct is mixed up what may be styled a "superiority complex," a desire to outvie one's fellows, to break some record, to climb some untrodden peak, or to acquire some outstanding work of art. To attain to such ends men will brave injury, disease, or death. No doubt this instinct has a share in the lure of rare maladies, but if that were all, and if the pursuit of such studies had no other aims, I should not be speaking of it this evening. It is rather, as Harvey saw so clearly, because we find in rare diseases the keys to not a few dark places of physiology and pathology, that I would recommend them to you as objects of study.

Even Morgagni, who held that there was no other road to medical knowledge than the collection and comparison of many cases of disease and of dissections, added that he did not despise, but specially studied, those which are rare and remarkable, despite the fact that their rarity makes such collation difficult.

We are told that in France, at the time of the first empire, when the French universities were in the melting-pot, there were established, in some of the medical schools, professorships for the exposition of rare cases and diseases; and in the "Dictionnaire des Sciences Médicales," published in 1813, there is an article by Fournier on rare cases which extends to no less than 120 pages. In our own medical journals and transactions I have found only two addresses on the subject, but the authors of these were both giants in their generation, in whose footsteps one treads with timidity. In 1882 Sir James Paget [2] opened the series of Bradshaw Lectures at the Royal College of Surgeons of England with a discourse on Some New and Rare Diseases, and in 1889 Sir Jonathan Hutchinson [3] stood in this place, and delivered the annual oration on the Clinical Uses of Rare Diseases.

Fournier's article, like the compilations published in earlier centuries by Zacutus Lusitanus and others, refers to a large number of cases, gathered from different sources. Some of them are fantastic; spontaneous combustions, scorpions in the brain, and the like; some are of great interest, such as a pineal tumour, a large salivary calculus, and a family with hæmophilia; and yet others are most intriguing, such as one quoted from Vepfer, which I have, as yet, failed to trace, of an elderly hemiplegic with yellowness of the skin limited to his paralysed side, and even to one half of his nose.

But the cases are thrown together higgledy-piggledy, with no systematic arrangement, and no suggestive comments. Just so in some museums collections of great value lose much of their educational value for lack of proper grouping; whereas in others, by skilful arrangement of material, perhaps less precious, we are shown the stages of evolution of living things, or of man's tools, weapons, or playthings. It is in the latter spirit that Paget and Hutchinson approached their subject, and I cannot forbear to quote a passage from each address, so characteristic in its phrasing that the elder among us will seem to hear the voice of the author behind his words.

Thus Hutchinson:

"Amongst the infinitely varied derangements of structure and function which make up the total of human maladies we have some which are constantly before us, and others so infrequent that a man may live through a long professional life and scarcely see a single example of them. All will admit that the first must be studied, as a matter of duty, by every conscientious practitioner, but respecting the latter there is a wide-spread and very natural feeling that it does not matter whether we understand them or not. It is against this form of apathy that I wish to protest to-night, and I am not without hope of making it clear that these varieties are often the most instructive; that they stand in close relationship to the common, and that it is the duty of all, so far as possible, to understand them, and to try also to further the knowledge of them."

Paget, speaking of rare cases, made the same appeal:

"But even as they are, singly and in disorder, we ought not to set them aside with idle thoughts or idle words about 'curiosities' or 'chances.' Not one of them is without meaning; not one that might not become the beginning of excellent knowledge, if only we could answer the question—Why is this rare? or, being rare, why did it in this instance occur?"

Harvey, Paget, and Hutchinson all suggest that the rarer maladies are specially instructive, but Harvey's reasons for the paying of special attention to such rarities appear to me the most convincing; and even to-day, when the boundaries of knowledge have been so greatly widened, they could hardly be improved upon.

That the study of what may be styled Nature's experiments is of special value, and that many lessons which rare maladies can teach could hardly be learnt in other ways, it will be my aim to show. Nor is this true of diseases alone—as witness the part played by the strange birds and beasts of remote oceanic islands in the genesis of the theory of natural selection.

The material available is so scanty that, as Morgagni pointed out, the collection and comparison of many examples is out of the question; but, in connexion with common and rare diseases alike, the careful study of individual cases may teach us much. As witness the work of James Mackenzie and of Thomas Lewis on the so common derangements of the heart's beat, and of Lewis and his fellow-workers upon the flush, the flare, and the wheal which result from a trifling trauma, such as a stroke, applied to the skin. These researches show us how immensely our knowledge might be enlarged if all such everyday phenomena were made the subject of accurate scientific investigation along similar lines.

There are two preliminary questions to be considered at the outset of our inquiry—namely, whether we need to draw a dividing line between rare cases and rare diseases; and, secondly, what is meant when we speak of a rare disease?

I think that the answer to the first question is in the negative. Any example of a rare disease is a rare case; and a rare syndrome may be due to a lesion of a common kind in an uncommon situation. Nor is it easy to define the meaning of the term disease, which is habitually applied to a great variety of conditions belonging to widely different categories.

As regards the second question, I do not propose to include maladies which are common in hotter countries, but rare in or absent from our own; nor infective diseases of the lower animals rarely met with in man; nor maladies due to dietary defects, such as scurvy, beri-beri, and pellagra; or which have become rare under changed conditions of life, such as chlorosis.

The truly rare maladies, of which I propose to speak, are such as are seldom seen in men living on any part of the globe nor under any conditions of life. It is true that a rare case may be only an extreme example of a condition which, in minor degrees, is common or well-nigh universal. As Hutchinson pointed out all of us whose fingers ever "die" suffer from a slight degree of Raynaud's disease, the text-book description of which is based upon extreme examples; but the rare malady, in the most strict sense, results from a lesion limited to a very unusual situation, or from some constitutional peculiarity of the patient which determines its occurrence. As often as not the patient and not his disease is exceptional.

A further question is, what is the criterion of rarity. I take it that between those common illnesses which go far to fill the wards of our hospitals, and those so uncommon that the recorded examples can be counted upon the fingers, every degree of rarity is represented. Yet there is not much practical difficulty in drawing the line, and it seems to me that the bulk of diseases fall into one or other of the more extreme categories, and that comparatively few are "*somewhat* rare."

You will remember that Harvey wrote: "that it has been found, in almost all things, that what they contain of useful or applicable is hardly perceived unless we are deprived of them, or they become deranged in some way." That is, indeed, one of the chief reasons why rare maladies can teach us so much. They call our attention to the ordinary things which we have accepted as matters of course without inquiry.

Thus a London street without a lamp-post is very rare, and it is possible that some of my hearers have walked down Sackville-street frequently, and yet have failed to notice that it is such a street, or that the lamps are carried upon brackets which project from some of the houses. When we do notice this, our thoughts turn to the history of street-lighting; back to days before those of the lamp-lighter of our boyhood, when the lighting depended upon the individual householders. So the unusual has called our attention to the usual and familiar, with the result that our knowledge is increased.

Again we accept without a thought our own asymmetry, and regard it as natural that our livers should lie to the right, our spleens to the left. When we meet with a case of transposition of viscera it sets us thinking, and we wonder what is the underlying cause of the more usual arrangement. The albino, too, with silvery hair and unshaded eyes, directs our thought to the problems of animal coloration.

To pass on from the general to the particular. One important and most instructive group of rare maladies includes those which are due to a strictly localised lesion of some particular organ, and in which the disease performs a physiological or pathological experiment. Tumours of the pituitary gland produce in some cases the syndrome which goes by the name of Fröhlich who first described it, and which is ascribed to lack of the hormones of that gland. Similar changes have followed destruction of the pituitary by a bullet; but no accidental nor surgical proceeding can, as some tumours appear to do, bring about over-activity of an endocrine gland. Despite the liability of certain organs to special kinds of tumours, it is to be expected that lesions so accurately localised will be, to say the least, uncommon; and this more especially when the lesion is not a tumour of a gland but an area of damage, due to hæmorrhage or inflammation, in some part of the central nervous system.

A larger number of rare maladies have, as their underlying causes, more or less abrupt departures from type such as are usually spoken of as mutations. These mutations, which are transmitted to offspring, either as dominant or recessive characters, may be in themselves disadvantageous to their subjects; or may entail such impairment of resistance to external influences that disease may result from apparently trifling causes, such as traumata too slight to induce disease in normal people: or that the agents of disease may find in them an unusually receptive soil. Given favourable conditions the same mutation may reappear from time to time, in subjects who do not inherit it, but hereditary transmission is far more common.

Such departures from type are often very instructive as throwing light upon problems of heredity, on the development of our bodies and of the living processes of which they are the seats, and on the liabilities of individuals to special forms of disease. Seeing that conspicuous mutations are not common, we have here an additional reason for the special interest which attaches to the study of rare maladies.

Unfavourable mutations—and it is with these alone that we are now concerned—are of various kinds. Some are anomalies of structure, and others of function. The structural mutations may manifest themselves as malformations, such as claw-hand or excess of digits; or as anomalies of tissues of a particular class, such as the neuro-muscular systems, an affection of which, though obviously congenital and hereditary, develops only in late childhood, or even in adult life.

Functional mutations, like interferences with a delicate and complicated machine, bring about results which, however undesirable, may throw valuable light upon its normal working. So from the study of some rare maladies we gain much knowledge of diathesis, the constitutional factor in the causation of disease.

Idiosyncrasies also, those special sensitivities to certain protein substances, to pollens, foods, and drugs, have a share in the causation of some rare syndromes, which serve to throw light into dark places of physiology and pathology.

It will obviously be impossible, within the compass of a brief address, to do more than mention a very few examples amongst the many which might serve to illustrate my theme; and I will take as my first example one which is perhaps the most important of all, owing to the great value of the lessons which it has taught.

Addison's disease may be classed amongst the least rare of rare maladies, and all of us have met with cases of it. Although its signs and symptoms are conspicuous, our knowledge of it dates back only to the year 1855, to the publication of an epoch-making monograph in which were set forth the results of some researches of the great physician after whom it is named.

We can follow him, in the pages of his monograph, through the stage of clinical observation of a syndrome now familiar, each item of which, the pigmentation, asthenia, low blood pressure, and gastro-intestinal disturbances attracted his attention.

Simultaneously he recognised the pathological change associated with this fatal malady, the extensive disease, usually caseation, of the adrenal capsules. The association of the clinical and pathological pictures was so close that in his later

cases he was able to predict the adrenal lesions during the lifetime of his patients.

Addison's pamphlet may serve as a model of scientific clinical medicine controlled by morbid anatomy, and merely as such is of great interest. But that is far from all, and in his preface its author describes it as "a first and feeble step towards inquiry into the functions and influence of the adrenals, suggested by pathology"; for it was clear to him that it was the seat and not the nature of the lesions which determined the symptoms.

Before long it became clear that Addison's disease is, in the great majority of cases, tuberculosis in an unusual situation. But even now there are still problems to be solved. We cannot yet explain each symptom as due to lack of some known product of the destroyed adrenals. We do not know the cause of the pigmentation, nor why the tuberculous lesions should so often be limited to the pair of adrenal glands, which appear to be seats of election of such infection.

From that "first feeble step" has grown up our knowledge not only of the functions of the adrenals, but also of the other endocrine glands, and of the hormones which they secrete. As more has been learned about them we have come to recognise in them the regulators of the metabolism of the tissues; and not of metabolism only, but of height and weight, temperature, and blood pressure. It has become increasingly evident that the several ductless glands, acting, some as mutual opponents and others as allies, form a balanced mechanism, which sets limits to these various functions, and by readjustments of which the phenomena of puberty and of the climacteric are brought about.

It is true that long before 1855, exophthalmic goitre had been recognised and described by several observers, Caleb Parry, Graves, Basedow, but it was not until much later that the signs of that disease were recognised as due to disturbance of the internal secretion of the thyroid gland. Even as late as in 1889, Hutchinson, in his oration, referred to Graves's disease and myxœdema as extreme forms of common conditions, and added: "Not that they are in any way allied. The one is a functional nervous disorder, the other a slowly insidious change of structure."

The most recent advances in endocrine studies; the isolation and synthesis first of adrenalin itself, and lately of thyroxin; the study of their physiological actions, and the utilisation of insulin, may rank among the greatest achievements of medical science, and all may be traced back, directly or indirectly, to Addison's researches.

In like manner local lesions have helped to reveal the functions of other ductless glands besides the adrenals, but the lesions in question have been for the most part tumours, some of which abolish the activities of the affected structure, whereas we are led to believe that an adenoma may actually enhance its power of producing hormones. So in the case of the pituitary body tumours are capable of producing such widely different pictures as acromegaly on the one hand, and Fröhlich's syndrome on the other.

Save from information so afforded we know little of the functions of the adrenal cortex, but an adenoma of an adrenal has so frequently given rise to a characteristic syndrome, that we cannot doubt that a disorder of the secretion of the cortex is its exciting cause. So striking indeed is the appearance of a child with such a tumour, an appearance which has been aptly likened to that of a brewer's drayman, the obesity, hirsuties, and florid countenance, that a correct diagnosis has repeatedly been made before an abdominal tumour could be felt. However, our knowledge of this matter is still far from complete, and not at all comparable with what is known of the functions of the thyroid and pituitary. What we do know has been gained by the observation of cases of a very rare condition.

No less rare are tumours of the pineal gland, which have already yielded most suggestive information, although their message is still obscure. In a certain number of cases such tumours have been associated with a condition of premature puberty. Naturally such developments are only pronounced when the patient is below the ordinary age of puberty; but tumours of the pineal in adults, although giving rise to pressure signs, have failed so completely to induce changes suggestive of endocrine disturbance that it is inferred that the gland ceases to function before puberty. If so, it may be regarded as a "Peter Pan" gland, so to speak, the function of which is to restrain too rapid growing up. However, there are certain difficulties in connexion with such an interpretation, and there are some who maintain that the pineal is at no period an endocrine gland. We have as yet no clear experimental proof of its possession of such functions, and in some cases the syndrome has failed to develop, although all the needful conditions appeared to be fulfilled.

Evidence of a like kind, based upon the destruction of a special structure, has played an important part in the elucidation of the functions of the several parts of the central nervous system, for instance, Broca's observations upon the motor speech centre. Here again a tumour is more apt to produce a sharply localised lesion than is a hæmorrhage or an inflammatory process, and it is not remarkable that such lesions are uncommon.

To pass on now to a wholly different class of rare maladies I should have preferred, had it been possible to say nothing this evening about inborn errors of metabolism, a subject with which I fear to weary my colleagues; but to omit all reference to alcaptonuria would be to forgo some of the strongest arguments which can be brought forward in support of my thesis. Alcaptonuria is so rare an anomaly that, in all probability few of those present have ever met with it, although, when met with it is little likely to escape attention. It behaves as a characteristic Mendelian recessive character, and is wont to occur in several brothers and sisters whose parents are usually normal, but are in a large proportion of cases first cousins. Indeed, it was in this connexion that Bateson pointed out that consanguinity of parents is to be expected to be common in the case of a rare recessive character, to which both parents must contribute recessive gametes. Conversely, an anomaly which is so transmitted is presumably recessive, and so a valuable aid is provided to the recognition of recessive characteristics in man.

By the study of alcaptonuria from the standpoint of chemistry and by the administration to its subjects of a variety of aromatic compounds, much light has been thrown upon the catabolism of proteins, and especially upon the fate, within the organism, of the aromatic fractions tyrosin and phenyl-alanin, of which, almost alone among aromatic compounds, the benzine ring is broken up in the course of normal metabolism. Moreover, it has taught us how a metabolic product may have the power of staining certain living tissues in a selective manner; and lastly, we learn from this anomaly that a trifling deviation from the normal in metabolism, and the presence in the issues of small quantities of an intermediate product, normally destroyed, may so lower the resistance of tissues that after the lapse of many years there is developed, under the ordinary stress and strain of daily life, a characteristic form of osteo-arthritis. Here we are confronted with a tangible diathesis, a predisposition due to a recognised cause; and we may claim with confidence that, in this and in the several other ways mentioned, the study of alcaptonuria has contributed very materially to the advancement of medical science.

Still rarer than alcaptonuria is congenital porphyrinuria, or hæmatoporphyria, and although it stains the bones a deep brown colour, I have failed to find any records of human bones so stained, save in the few known cases of the anomaly. Such staining could hardly be overlooked at an autopsy, and the deep red colour of the urine is itself sufficiently conspicuous. It was the investigation of a case of

this kind which led Hans Fischer to embark upon fruitful researches upon the pigments of the porphyrin group, which have shown that these pigments appear much lower in the evolutionary tree than hæmoglobin, and even in so lowly an organism as yeast. Keilin's[4] discovery of cytochrome, which is so widely distributed a constituent of living cells, opens out new vistas, and adds greatly to the importance of such inquiries.

This anomaly has also taught us much regarding the action of light upon the living organism, and the origin of some skin affections which result from exposure to light.

My next example will be taken from that group of tissue anomalies which includes the familio-hereditary affections of the nervous and muscular systems, for which Gowers suggested the name of "abiotrophies," and which are fraught with valuable lessons for pathologists and clinicians alike. They illustrate various types of hereditary transmission, dominant and recessive and that peculiar form known as sex-linked recessive, which is transmitted by normal females to their male children.

They present morbid states which are obviously hereditary and inborn, but which give rise to no obvious signs or symptoms until some years after birth. If it be permissible to compare the human body to a bridge, so strongly constructed that it will last for many years, unless subjected to strains much greater than those to which it is habitually exposed, the body of the victim of an abiotrophy may be compared to a bridge so much less solidly built that it quickly suffers damage, and soon succumbs, under the strain of the ordinary daily traffic of the roads.

The abiotrophies, which, by the way, are not confined to neuro-muscular tissues, illustrate a point on which Hutchinson was wont to lay much—perhaps too much—stress, namely, the affinities between morbid states and their tendency to merge into each other. Thus in a particular family different tissue anomalies may crop up in different members, in one some form of muscular atrophy, in another a myotonia. In some instances this apparent affinity is due to an underlying anomaly of which the several symptom-complexes observed are all manifestations, just as local riots may be the only obvious signs of widespread popular unrest.

An excellent example of this is afforded by the malady known as dystrophia myotonica, and how our knowledge of it has developed is well told in a paper by Adie and Greenfield,[5] published in 1923. The story begins with the recognition of a group of cases in which a myotonia, such as is the conspicuous feature of Thomsen's disease, is associated with muscular atrophy of somewhat unusual distribution, facial, cervical, brachial, and sometimes peroneal—the Batten-Steinert-Curschmann syndrome. Then follows the discovery of the association of that syndrome with cataract, either in the patients themselves, or in members of earlier generations of their families. Later, it was recognised that dystrophy, myotonia, and cataract alike are some only of the manifestations of a great heredo-familial malady, other signs of which are changes in the thyroid gland, testicular atrophy, baldness, increase of sweat and tears, and cyanosis and coldness of the extremities. The muscular dystrophy and myotony have in the observed cases been limited to the collaterals of one generation of a family, seldom developing before the age of 25, but cataract has been traced back through four or five generations. Moreover, as is not infrequently the case with abiotrophies, the signs tend to appear earlier in members of the later generations.

Some recent investigators hold that the underlying factor in the disease under discussion is a widespread defect of the endocrine glands, and that we are here confronted with a pluriglandular syndrome. It may well be that other affections of this group, the abiotrophies, will prove to be local manifestations of much wider maladies; and that the link between the calcareous deposits and the digital anomalies in myositis ossificans may be found in a generalised defect of the mesenchymatous tissues, of which these are merely the most conspicuous signs.

Let us turn now to the consideration of a very rare and curious disease which was first described by Gaucher in 1882, and goes by his name.[6] He described, under the title of primary epithelioma of the spleen, a form of enlargement of that organ, met with in a child, and characterised by the presence, in the splenic tissue, of numbers of large hyaline cells which stain but feebly. The microscopic picture is alike in all cases of the malady and is quite distinctive. Before long it was realised that this was no form of malignant growth, and that the changes were, by no means, limited to the spleen. The liver becomes greatly enlarged; the hæmopoietic tissues generally, including the bone-marrow are involved; and the peculiar Gaucher cells are found in all the affected parts. Beginning in infancy the disease is in the highest degree chronic, and continues on its snail-paced course through decades of the patient's life. It is wont to occur in several children of a family whose parents are not affected, but consanguinity of the parents has not been recorded. A large majority of the sufferers have been females.

In recent years it has been shown that the Gaucher cells owe their peculiar swollen and hyaline appearance to the presence in them, in quantity up to 10 per cent. of the dried spleen, of a chemical substance which has not been found in normal splenic tissue. This substance, kerasin, is allied to cerebrin, and is a member of the class of galacto-lipins. Whether the kerasin, as such or a more complex compound of which it is a constituent, is formed in or deposited in the Gaucher cells has not yet been determined. Pick, one of the most recent writers on the subject, holds that Gaucher's disease is due to an inborn error of metabolism, but thinks it probable that here the metabolic process is perverted, and not merely interrupted at an intermediate stage; in other words, that kerasin is a product of abnormal metabolism. He points out that in diabetes a deposition of abnormal chemical materials occurs in the reticulo-epithelial tissues.

Here again we may trace the successive stages of the elucidation of the nature of a rare malady, fraught with important pathological lessons. The subjects of such maladies as the abiotrophies and Gaucher's disease furnish striking examples of constitutional liabilities. It is because they are uncommon individuals that they are predestined to suffer. In other words, the patient rather than the malady is rare.

I trust that the few examples which have been quoted will suffice to show how much has been learned from the study of Nature's experiments, and even that they are in some instances more instructive than our commoner ailments. But my chief object is not to show how much has been accomplished, but to urge the continuance of work on these lines; seeing that there are many rare maladies the lessons of which have been learnt only in part, or have not yet been learnt at all. Yet when we compare them with those of which I have already spoken, we cannot doubt that they "might become the beginning of excellent knowledge"; and even whilst their problems are still unsolved, they offer many points of interest.

For example, the syndrome known as intermittent hydrarthrosis has features which may be described as uncanny. Effusion into one or both knee-joints, and only seldom into other articulations, recurs with a regularity comparable to that of some forms of malaria, but which is clearly not connected with the life-history of any parasite. The period varies in different cases, but apart from slight progressive postponements or anticipations, remains constant for the individual case. From the commencement of one attack to that of the next, a common interval is from six to eight days, and the usual duration of an attack is about three days. So the patient can

predict with accuracy the dates of future attacks and make arrangements accordingly.

Obviously the trouble is not primarily in the joints, for they are usually normal between attacks. Moreover, energetic local treatment of an affected knee may cause the hydrarthrosis to transfer its attentions to the other, and the attacks cease during a pregnancy to return after delivery.

An exactly similar periodic hydrarthrosis is sometimes met with in cases of arthritis of various kinds. The distension of the joint with fluid recurs at regular intervals, but the clinical picture is blurred by the failure of the joints to recover between the attacks. Schlesinger,[7] who has studied this affection for many years, does not include these secondary cases in the same category as the primary ones, but I cannot see any sufficient grounds for excluding them.

It was Schlesinger who originally suggested that the hydrarthrosis was a kind of *hydrops hypostrophos*, and more and more evidence has been produced in favour of its anaphylactic nature. In some cases the attacks have coincided with transient swellings of the lips or eyelids, in others with forms of urticaria, and in others with asthma, but not always simultaneously with the joint trouble. They may alternate, and one patient said that she preferred to have asthma in her knees rather than in her lungs. In a few cases desensitisation by small injections of protein have been tried with encouraging results, but they are too few as yet to be conclusive.

There is undoubtedly a connexion between the cutaneous lesions of the erythema group and affections of the joints. For evidence we need not seek further than the familiar serum sickness, and Henoch's purpura, erythema nodosum, and even rheumatic fever tell the same tale. Again, periodicity is met with in other maladies of the anaphylactic group, in erythemata occasionally, in asthma often, and in Henoch's purpura almost always. The periodic vomiting of children also is probably another member of the group. But in none of these other conditions, with the possible exception of the last, is there any such accurate periodicity as in hydrarthrosis. The most likely explanation would appear to be that each attack desensitises the patient for a time, at the expiration of which the trouble recurs. As long ago as 1868, Salter, in his book on asthma, written long before sensitivity to proteins was dreamed of, suggested that the periodicity in some cases of that disease and the apparent immunity in the intervals might be due to the accumulation of an unknown something between attacks and its discharge during the attack. He mentions that "for some time after an attack, the time varying according to the interval characteristic of that particular case, the patient may expose himself to the ordinary exciting causes of the paroxysms without the slightest fear of inducing one." And that was written 60 years ago!

When we review the outcome of the study of intermittent hydrarthrosis up to now, we realise that its lessons are only half learnt, and that it has still more to teach us.

This is even more true of the very uncommon syndrome known as sulphæmoglobinæmia.[8] No morbid condition asks more clearly Paget's questions: "Why is this rare? and, being rare, why did it in this instance happen?" It is clearly an acquired malady, with no indication of family or hereditary occurrence. The presence in the red corpuscles of the compound sulphæmoglobin produces a somewhat peculiar kind of cyanosis, similar to that due to the allied methæmoglobinæmia. The investigation of this condition, by its discoverer Hijmans van den Bergh and others, has brought to light a number of interesting facts, but its chief problems still await solution. It is clear that the presence of sulphæmoglobin in the blood is not due to any excess of hydrogen sulphide in the circulation, and in cases of poisoning by hydrogen sulphide it is not observed. Given certain conditions the normal trace will suffice. The formation of sulphæmoglobin is favoured by the presence of certain chemical substances, notably reducing agents such as hydrazine, in the blood, but it does not occur, even with hydrazine, if oxygen be completely excluded. Snapper has shown that prolonged administration of phenacetin, in doses too small to induce methæmoglobinæmia, can give rise to sulphæmoglobinæmia.

In some cases a nitrifying bacillus has been found in the saliva, and in some in the fæces; whereas in other cases no such organism has been found. Whatever be the conditions necessary for this compound of hæmoglobin to be formed in the blood, they can very rarely be fulfilled, for the malady is decidedly uncommon. If it be an infective disease, it is remarkable that the cases should be so few and so widely scattered, which would suggest that the bacillus in entering the human organism had missed its true vocation.

Another example of a rare malady which presents important unsolved problems is chloroma. A great advance was made when it was recognised that the remarkable green tumours, with their curious distribution, were associated with a form of leukæmia. The clinical picture, the tumours upon the skull, and the exophthalmos caused by tumours in the orbits, might be described as characteristic of chloroma were not a practically identical picture presented in cases of left malignant hypernephroma. The two diseases have only this in common; the similarity depends upon the distribution and not on the nature of the lesions, and the distribution is apparently due to spread along lymphatic channels and the thoracic duct. We do not know why tumours, with such distribution, should develop in this variety of leukæmia and the nature and origin of the highly unstable pigment which imparts to them their green colour is still obscure. It certainly is not a bile pigment, and is more like a lipochrome; but as I can testify, the investigation of it is beset with great difficulties.

I should have liked, had time permitted, to have spoken of that malady involving the bone-marrow, of which the copious excretion of the Bence Jones protein is a diagnostic sign, for it is one of the most obscure of rare diseases. Again that weird mixture of infantilism and premature senility which Hastings Gilford described under the name of "progeria," and the developmental anomalies of bony structures, of which achondroplasia, oxycephaly, and hypertelorism may be cited as examples, have not yet revealed their secrets, but may be expected to repay investigation in course of time.

It would be easy to mention many other conditions which offer like problems; but I do not think that it is necessary to adduce any more examples to prove my point. Those which have been chosen may be looked upon as representative. They have been selected from widely different regions of the province of medicine, and, for the most part, have nothing in common save their rarity and their instructiveness. Yet all of them, to quote Paget once more, "have that kind of attraction which belongs to everything which excites wonder," and each brings its particular contributions to the sum of knowledge. All alike tend to prove the truth of Harvey's dictum, that "Nature is nowhere accustomed more openly to display her secret mysteries than in cases where she shows traces of her workings apart from the beaten path."

We may feel sure that, in the future as in the past, there will be many who will try to solve the problems of the commoner diseases, the control of which is of such vital interest to the community at large. Let us hope that there will always be some who will seek to guess the riddles and to learn the lessons of the rarer maladies.

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(*Continued at foot of next page.*)

RELAPSES IN SCARLET FEVER.

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DURING the past 21 months all cases of scarlet fever admitted to the Ilford Isolation Hospital (432 in number) have been treated with concentrated scarlet fever antitoxin. We propose at a later date to analyse the results which have thus been obtained. For some time we have observed that the occurrence of true relapses of scarlet fever appeared to be more frequent (the percentage relapse rate on the 432 cases was 4·16) and therefore it was decided to apply the Dick test to: (1) all scarlet fever patients in the wards on a certain date; (2) all these cases at weekly intervals; and (3) all new cases on admission and at weekly intervals after their admission.

The text-books give the impression that true relapses in scarlet fever are very rare and of little practical importance. In some of the books confusion appears to exist in the figures, and insufficient attention appears to have been paid as to whether or not the patient had a typical attack of scarlet fever on admission. As a matter of fact relapses are of considerable administrative importance. When a relapse occurs the general practitioner is often blamed for sending a patient into an isolation hospital only to contract scarlet fever there, when in fact his original diagnosis was a correct one and a relapse of the disease has occurred. The percentage of relapses given by various authors is as follows: Scholes (Melbourne), 0·35 per cent.; Rolleston, 1 per cent.; Ker, 1 per cent.; Caiger, 1·1 per cent.; Goodall, 1·53 per cent.; Ker and Rundle, 2 per cent.; while Box quotes figures varying from 0·5 to 7 per cent.

It would appear from this that a true relapse-rate of between 1 and 2 per cent. might be taken as a fair average; the 7 per cent. rate quoted by Box probably includes cases which cannot come under the definition of true relapses.

Table A shows the relapse percentage-rate in 13 hospitals of the Metropolitan Asylums Board during 1914, calculated from the figures supplied in the M.A.B. report for that year. Those hospitals which are marked with an asterisk received large numbers of transfers of convalescent cases from other hospitals. In view of the conclusions which we have come to as regards the causation of a relapse in scarlet fever it is interesting to note that the relapse-rate in these three hospitals is considerably higher than in the others.

TABLE A.

1	2	3	4	5	6	7	8	9	10	11	12	13
0·56	0·71	0·13	1·1	0·51	1·3	0·50	0·0	1·1	2·0*	0·0	1·5*	1·4*

In 1891 Boddie[1] brought a communication before the Medico-Chirurgical Society of Edinburgh, describing two home-nursed cases of scarlet fever, which had relapsed. These have been quoted as cases of auto-infection, but it is not clear, on reading the cases, that reinfection could be entirely excluded.

In the discussion which followed, some speakers held the view that relapses occurred only during the second and third week. This is not the view now generally held, and probably the so-called relapses which took place at these periods were really primary attacks. True relapses are very uncommon before the fourth or fifth week. Boddie, in a review of the literature of the subject, mentioned that some writers described relapses and "pseudo-relapses." It would seem probable, however, that the latter are due to some intercurrent infection, such as rubella. If relapses occur in home-nursed cases of scarlet fever they must be extremely rare, for Dr. D. C. Kirkhope, M.O.H. for Tottenham, whose experience in nursing cases of scarlet fever at home is probably unique, has informed us that between April, 1922, and December, 1927, 2383 cases of scarlet fever had been treated at home at Tottenham and in no instance had there been a relapse.

Dick Tests in Acute Cases of Scarlet Fever.

For the purpose of this article the term "relapse" is taken to mean a repetition of the attack, including rise of temperature, punctate erythema, congested fauces and peeling tongue, occurring during the convalescence of a patient from a primary attack of scarlet fever. This investigation has been made as an aid to the elucidation of the problem and the relationship of relapses to immunity in the disease. The Dick test was performed in 93 consecutive cases, and the results of the tests compared with those at later dates. The whole series were given 10 c.cm. of concentrated scarlet fever antitoxin serum intramuscularly on admission, with the exception of three cases, one of which received 5 c.cm., one 10 c.cm. (and a further 10 c.cm. when the relapse occurred), and a third 20 c.cm. New cases admitted after this investigation commenced were given the serum four hours after the Dick test was done. The test was read at the end of 24 hours, a definite erythema of ¼ in. or over being read as "positive," and the results classified as: (*a*) negative, no erythema; (*b*) erythema of ¼ in.–½ in.; (*c*) erythema, ½ in. or over.

TABLE I.—*Results of Dick Test in 93 Serum-treated Cases of Scarlet Fever.*

Day from onset of rash.	No. of cases.	Percentage negative.	Percentage positive.		
			¼–½ in.	½ in. and over.	Total.
1–3	41	9·7	49·0	41·3	90·3
4–7	8	62·5	12·5	25·0	37·5
8–10	37	89·2	5·4	5·4	10·8
11–14	15	66·8	26·6	6·6	33·2
3rd week ..	52	71·7	25·0	13·3	28·3
4th „ ..	52	57·7	15·4	26·9	42·3
5th „ ..	43	67·4	16·3	16·3	32·6
6th „ ..	32	65·7	15·6	18·7	34·3
Over 6 weeks	63	62·0	9·5	28·5	38·0
—	341	—	—	—	—

Period 1–3 and 4–7 days do not include cases which had received serum before the Dick test was done (four cases = negative Dick test). Other periods: All cases had received serum at some time previously.

Indefinite results	8	
Results obscured by rash	5	
Results during, and following, relapses:		
Obscured	1	
Negative	27	
Positive (erythema ¼–½ in.)	2	
Positive (erythema ½ in. and over)	13	
Total Dick tests performed—Table I.	341	401
Other	60	

In Table I. the results are summarised, and the following points in this table are worthy of comment:

(*a*) The high percentage of positive results in the first three days. (*b*) The sudden fall in the number

LESSONS OF RARE MALADIES.

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of positive results in the period from the eighth to the tenth day, due, of course, to the passive immunity produced by the injection of scarlatinal antitoxin. (*c*) The rise in the number of positive results until the third week. (*e*) The fall in the number of positive results in the fifth and sixth weeks. No cases of scarlet fever are included which were admitted during the desquamating stage or during convalescence. All the cases were typical cases of acute scarlet fever on admission to the hospital.

TABLE II.—*Comparison of Results of Dick Tests in Scarlet Fever Patients.*

Day of disease.	Benson and Simpson.[4]	Ker, McCartney, and McGarrity.[5]	Taylor, Smith, and Kinloch.[6]
	Number of patients tested and positive percentages.		
	50	441	170
1–3 days ..	50 (100)	23 (73·9)	98 (79·5)
4–6 ,, ..	—	103 (58·2)	54 (51·8)
7–14 ,, ..	—	78 (24·3)	18 (27·7)
3rd week ..	} 50 (48)	68 (23·5)	—
4th ,, ..		44 (9·0)	158 (14·0)
5th ,, ..		60 (16·6)	—
6th ,, ..	—	24 (4·1)	—
Over 6 weeks	—	41 (7·3)	—

Table II. gives a comparison with the results of other workers. It will be noticed that whereas the serum-treated cases showed a percentage of strongly Dick-positive results during the third, fourth, fifth, and sixth weeks of 13·3, 26·9, 16·3, and 18·7, the non-serum treated cases showed a much less number of strongly positive results.

Okell and Parish,[2] in testing 120 convalescent scarlet fever patients, and reckoning all reactions as positive, found that 18 per cent. of convalescent patients give a Dick-positive reaction. It will be observed from Table I. that the serum-treated cases showed a much higher percentage than this. Okell and Parish found it difficult to explain the results which they had obtained, and gave four explanations: (*a*) that the present methods of diagnosis are not wholly satisfactory; (*b*) that patients who have had scarlet fever do not necessarily become immune to the toxin or become so, in some cases, very slowly; (*c*) that strains of scarlet fever streptococcus may produce more than one toxin; (*d*) that the test is not a true indication of susceptibility to scarlet fever. On the whole, they were inclined to consider that (*b*) was the probable explanation. O'Brien[3] has suggested that Dick-positive reactors during convalescence from scarlet fever may have cured themselves of their fever by producing antitoxin which is still locked up intracellularly, and that the cells are slow to excrete the antitoxin into the blood stream. We would suggest, however, that the Dick-positive reactors in convalescent scarlet fever cases are persons who have failed to develop immunity.

It will be noticed in Tables I. and II. that the establishment of immunity in scarlet fever does not follow a straight line. It has been suggested by O'Brien that the use of antitoxic serum may delay the development of immunity during convalescence. We would go further than this, however, and state that, according to the results given above, in certain individuals immunity does not develop at all. In Table B are given examples showing failure in the development of immunity in cases other than those which showed a relapse.

This variability in the individual immunity produced by an attack of scarlet fever may depend upon either: (*a*) the virulence or type of the primary infecting *Streptococcus scarlatinæ*; (*b*) the individual power of resistance to this type of antigen; or (*c*) the interference with the formation of antitoxin by the patient's own cells, caused by the initial administration of antitoxic serum.

TABLE B.

Case No.	Sex.	Age in years.	Day of test.	Result of Dick test.
17	M	5	17	Positive.
			24	,,
			31	,,
			41*	,, ¼ in.
			48	,, ½ in.
			55	Indefinite.
			62	Positive.
24	M	7 1/12	29	,, 1 in.
			36	,, 1 in.
			44	,,
34	M	8	2	Negative.
			9	,,
			16	,,
			23	Positive, ½ in.
			30	,, ¼ in.
			37	Indefinite.
			44	Positive, 1 in.
			45	,, 1 in.
36	M	5	2	Positive.
			9	Negative.
			16	Positive, 1 in.
			23	,, 1 in.
			30	,, ¼ in.
			37	,, ½ in.
			44	,, 1 in.
55	F	7	2	Positive.
			8	,, 1¼ in.
			17	,, 1 in.
			24	,, ¾ in.
			31	,, 1 in.
59	F	3 7/12	1	Negative
			8	Positive, ½ in.
			15	,,
			22	,, ½ in.
			29	,,
			36	,,
67	M	—	4	Positive, 1 in.
			11	Negative.
			18	,,
			25	,,
			32	Positive, 1 in.
			33	,, ¼ in.
73	M	2 9/12	2	Positive, ½ in.
			9	Negative.
			16	Positive, ½ in.
			23	,, ½ in.

* Repeat test.

We append below particulars of the 18 true relapses which occurred at the Ilford Isolation Hospital in the 432 cases reviewed. (Table III.)

It is notable that:—

1. The majority of relapses occurred in young children. Whether this fact is of any practical importance or not cannot be stated, as the greater proportion of the cases admitted to hospital occurred during childhood.

2. Only 6 complications developed after the primary attack in these cases compared with 23 complications which occurred after the relapses.

3. The majority of the patients were up and in the convalescent ward at the time of the relapse.

4. Thirteen of the relapses took place between the twenty-second and fifty-first day. Only one occurred before the beginning of the fourth week.

5. The Dick test was found in four cases to be negative at various periods after the relapse and to remain negative. In three cases it was positive before and after the relapse. In one case the immunity varied after the relapse.

A short account of two cases (13 and 16) is not without interest, as the Dick test was strongly positive before the relapse in both cases.

Case 13 was a girl aged 8, who was admitted with a well-marked attack of scarlet fever, strawberry tongue, and some rhinitis. Nasal swabs were taken which were negative for the Klebs-Löffler bacillus. The temperature was 103·6° on admission. She was given 10 c.cm. of scarlatinal serum. She developed slight cervical adenitis and, in view of the nasal discharge, was nursed by the "barrier" system. At the end of the third month of her stay in hospital the Dick test was positive for three consecutive weeks. Her rhinitis having cleared up, the "barrier" was discontinued, and she was allowed to be up in the convalescent ward. It was decided, however, in view of the persistent Dick-positive result, to give her a further injection of scarlatinal serum to induce a more prolonged immunity. This was done, but too late to prevent a relapse, because in the afternoon of the same day that the serum was administered she developed the typical scarlet fever rash, temperature of 99·8°, and later a strawberry tongue. In fact, when the serum was given she showed signs of a commencing relapse. Five days after this attack her Dick test was negative, and a week later it was again negative. For three subsequent weeks after this the Dick test was positive; on the last occasion an erythema of 1½ in. was noted, showing that she had again failed to develop natural immunity to scarlet fever. The existence of persons of this kind was recognised many years ago by Foord Caiger, who described one young woman who had three distinct attacks of scarlet fever within a period of three months, in the last of which she died.

Case 16 was a boy aged 7, who was admitted with a typical attack of scarlet fever, temperature 101°, and was

given 10 c.cm. of scarlatinal serum on admission. A fortnight after this the Dick test was positive, although the patient was desquamating freely, and it remained positive for three weeks. During this period the boy was being nursed in a side ward and strictly "barriered." At the end of this period he had to be removed into the main ward, where he was still "barriered," but seven days later he developed a typical scarlet fever rash, with a temperature of 103·6° and strawberry tongue. The Dick test showed pallor over the previous positive area. On three consecutive weeks following the relapse the Dick test was negative, showing that this boy had apparently now developed active immunity to scarlet fever. Following this, however, the boy gave a Dick-positive reaction in the two succeeding weeks. He belonged apparently to the same class as Case 13, his immunity being of a fleeting character.

Gunn, in the M.A.B. Report for 1926–27, states that not infrequently a patient suffering from a mild attack of scarlet fever may still have weakly positive or doubtful Dick reaction at the end of six or seven weeks and that, while most of the cases were discharged in this state, in some few instances they developed a second attack of scarlet fever and subsequently became completely negative Dick reactors. He associates himself with the view that reinfection with a different strain of scarlatinal streptococcus is the cause of the relapse. There does not, however, appear to be any evidence for this, and a true relapse appears to be due to an insufficient immunity conferred by the original attack. The two cases which have been quoted in some detail substantiate this view of the question.

Zingher, out of 232 patients, found that only 8·7 per cent. gave a positive Dick reaction during convalescence from scarlet fever.[7] It is well known that Zingher found a higher percentage of positive results in the first few days of the disease than other workers have done.[8] This is due to the fact, however, that he included as positive results all grades of reaction, as will be seen from his original paper.

Conclusions.

1. It is necessary to Dick test cases of scarlet fever admitted to an isolation hospital if relapses are to be avoided. In view of the fact that relapses are uncommon before the fourth week, it would appear that a Dick test should be performed at the end of the third week after admission to hospital.

2. It is unjustifiable to retain cases of scarlet fever in a general ward who give a marked Dick-positive reaction during their convalescence. Such cases should be either (*a*) treated in separation wards, or (*b*) immunised during the rest of their stay in hospital, or (*c*) isolated at home for the remainder of their convalescence.

3. Scarlatinal serum appears to have the definite effect of increasing the number of Dick-positive reactors during convalescence, and in any hospital in which the serum is given on a large scale the steps mentioned in 1 and 2 are most important.

4. There appears to be a definite class of individuals whose blood is unresponsive to the toxin of scarlet fever in the production of antitoxin, and while such cases recover from a mild attack of scarlet fever, they are liable to a relapse or to have two or more attacks. It will be an interesting point to investigate whether certain patients who have had scarlet fever and who are insusceptible to its toxin are still susceptible to the local bacterial action of the streptococcus, as, from the work of Kinloch, Smith, and Taylor, appears to be the case in persons who have been immunised by scarlet fever toxin. If this is so it would explain the late septic complications of scarlet fever, particularly rhinitis, which is such a frequent cause of the prolonged stay of patients or, if they are discharged too early, the production of return cases.

5. The results emphasise again the necessity of convalescent wards. Although most of the relapses

TABLE III.—RELAPSES IN SCARLET FEVER—ILFORD ISOLATION HOSPITAL.

No.	Sex.	Age.	Day of admission.	Complications before relapse.	Environment before relapse.	Day of relapse.	Complications after relapse.	Remarks.
1	M.	13	1st	(Dermatitis.)	Up. con. ward.	49th	Rheumatism, albumin. (Urticaria.)	Relapse. Medium eruption. Congested throat. T., 99·0°; P., 100.
2	M.	6	1st	Nil.	,,	37th	Adenitis.	Relapse. Marked erup. T., 100·4°; P., 122.
3	M.	3	1st	Rhinitis.	,,	29th	Adenitis, otorrhœa.	Relapse. Med. erup. Typical tongue. Cong. throat. T., 100·2°; P., 128.
4	M.	1 1/12	3rd	Otorrhœa, 9th day.	,,	49th	Adenitis, rhinitis.	Relapse. Marked erup. T., 99·4°; P., 130. Tongue peeled.
5	M.	14	3rd	Nil.	,,	35th	Quinsy, albuminuria.	Relapse; vomiting; marked erup. Cong. fauces. T., 103·2°; P., 110.
6	M.	5 6/12	2nd	Otitis media, 7th day.	,,	35th	Adenitis, rhinorrhœa.	Relapse. Marked erup. Cong. throat. T., 98°; P., 132.
7	F.	5 3/12	2nd	(Varicella.)	,,	48th	None.	Relapse. Marked erup. Tongue, strawberry. T., 100·2°; P., 120.
8	F.	6 6/12	2nd	None.	,,	29th	Adenitis.	Relapse. Med. erup. T., 99·4°; P., 96.
9	F.	6 6/12	4th	Rhinorrhœa, 32nd day.	Up. main ward.	51st	Adenitis, rhinorrhœa.	Relapse. Med. erup. T., 101·2°; P., 132.
10	F.	5	2nd	None.	Bed. gen. ward.	22nd	Onychia.	Relapse. Marked erup. T., 101°; P., 96.
11	M.	7 10/12	2nd	,,	Up. con. ward.	49th	Adenitis.	Relapse. Marked erup. Cong throat. T., 98·6°; P., 100.
12	F.	10	1st	,,	,,	40th	Rhinitis.	Relapse. Marked gen. erup. T., 100·6°; P., 108.
13	F.	8	2nd	Cervical adenitis.	,,	95th	None.	Relapse. Faint erup. Punctate erythema palate. Strawberry tongue. T., 99·8°; P., 120.
14	M.	5	4th	None.	,,	33rd	Nephritis, adenitis, rhinitis.	Relapse. Bright gen. erup. Tongue peeling. T., 102°; P., 130. Schultz Charlton positive.
15	M.	2 3/12	3rd	,,	,,	25th	Adenitis, otitis media.	Relapse. Marked erup. Cong. throat. Adenitis. T., 100·4°; P., 128.
16	M.	7	1st	,,	Gen. ward.*	30th	Adenitis.	Relapse. Marked erup. Cong. throat. Tongue strawberry. T., 103·6°; P., 120.
17	F.	5	4th	,,	Up. con. ward.	50th	None.	Relapse. Marked erup. Fauces cong. T., 99·4°; P., 120.
18	M.	8	1st	Otorrhœa.	Bed. gen. ward.	20th	,,	Relapse. Faint erup. Typical tongue. Cong. throat; cerv. adenitis. T., 101·8°; P. 122.

* See notes on case.

[7] Zingher, A. Journ. Amer. Med. Assoc. 1923, lxxxi. 1.

[8] Zingher, A. Journ. Amer. Med. Assoc. 1923, lxxxi. 1.

recorded occurred in convalescent wards, there is no doubt that if the cases had been treated in conjunction with acute cases throughout their illness the number of relapses would have been markedly increased. We are investigating this point further. Swabs from the throats of 21 patients in a convalescent ward showed that one patient was carrying *Streptococcus scarlatinæ*, type 2, 30 days after onset of attack and was still a carrier when tested after discharge from hospital 12 days later.

6. Relapses in scarlet fever are primarily due to lack of immunity in a patient. A relapse may be caused in such patients either: (*a*) by an auto-infection from the virus still present in the patient's body, as suggested by Caiger, or (*b*) by cross-infection with the same type of *Streptococcus scarlatinæ* as originally infected the patient, or (*c*) by cross-infection with another type of *Streptococcus scarlatinæ*.

There are a considerable proportion of Dick-positive reactors during convalescence from scarlet fever and a number of these reactors relapse. Relapse does not, as a rule, occur until the fourth week, and it would appear that in the majority of cases the explanation (*b*) is the most probable one.

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INVESTIGATION OF A SERIES OF CASES OF SECONDARY ANÆMIA

TREATED WITH LIVER OR LIVER EXTRACT.

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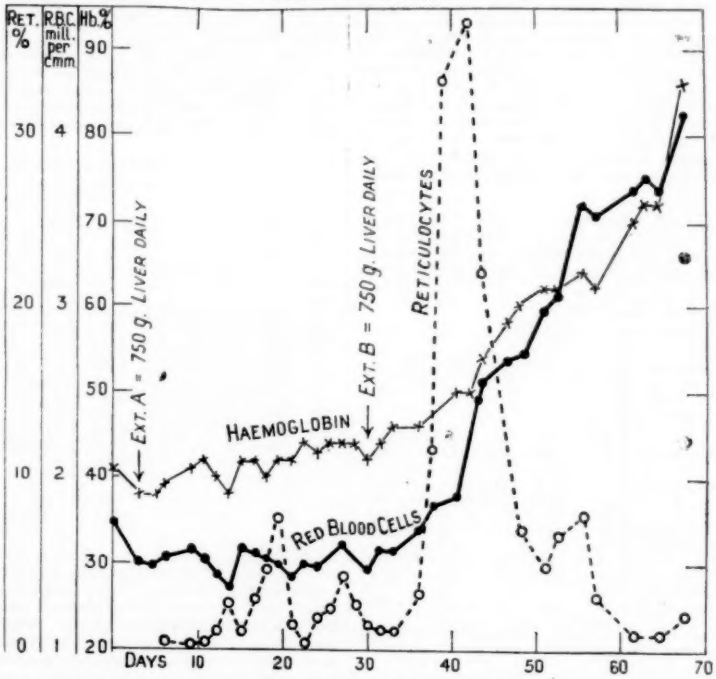
SINCE Minot and Murphy published in 1926 their first paper on the liver treatment of pernicious anæmia all additional evidence has strengthened tneir claim to have found in liver or liver extract a rapid means of combating this disease. The position as regards secondary anæmias is, however, far less clear. Very few cases have been published [1] and in no case have full details been given. The general consensus of opinion seems to be that liver is only useful in pernicious anæmia. This is surprising in view of the fact that the immediate cause of the application of a liver diet to pernicious anæmia was the startling result obtained by Whipple [2] in so treating secondary anæmia experimentally produced in dogs.

A series of cases recently investigated at University College Hospital suggests that, at any rate in certain types of secondary anæmia, liver, either whole or in the form of extract, may be definitely valuable. The cases fall into three groups: (1) pernicious anæmia; (2) anæmia secondary to hæmorrhage; (3) anæmias associated with a definite blood disease, or with carcinoma, and anæmias of unknown origin unassociated with any apparent hæmorrhage.

The 13 cases of pernicious anæmia have been briefly summarised [3] and a full report of them will appear later. Five were treated with liver extracts and the response to these was by no means uniform, as in the following instance:—

CASE 1.—Typical clinical and pathological findings. The patient was given extract A, equivalent to 750 g. of fresh liver a day, for 12 days. There was no response and the dose was increased to an equivalent of 1250 g. a day for six days, again with no result. Extract B in a dose equivalent to 750 g. was then given, and five days afterwards the reticulocytes started to rise, reaching a maximum of 36 per cent. on the eighth day. Twenty-six days later the red cell count had risen from 1,740,000 to 4,130,000 and the hæmoglobin from 41 per cent. to 86 per cent. (Fig. 1).

FIG. 1 (Case 1).



The remaining eight cases of pernicious anæmia were treated with whole liver and the results bore out the claims of other investigators as to the general improvement in the blood picture. Nevertheless this still presented a few abnormal features. The colour-index, in all but two cases, remained above 1, and in the early stages of improvement an index as high as 1·4 was found so often as to be almost typical. This cannot in any way be associated with the iron content of the liver as it was found in cases treated with extract as well as in those on whole liver. The leucopenia was persistent in those cases in which it was originally present. Three out of the 13 cases showed a lag in reaction, for which no reason appeared except in Case 5, where there was a negative indirect van den Bergh reaction at the start. Two of Fraser's [4] non-reacting cases also showed a negative indirect van den Bergh reaction. One of them died and the post-mortem findings were compatible with a diagnosis of pernicious anæmia, which controverts Minot's suggestion that cases which do not show a prompt response are not pernicious anæmia. The improvement in the subjective symptoms of shooting pain and tingling has been

definitely associated with a change to a far more genial outlook on life.

Anæmia Secondary to Hæmorrhage.

Two cases of secondary anæmia due to hæmorrhage were treated with extract. One was given both liver and extract and four took whole liver.

CASE 14.—A man, aged 34, was admitted on Jan. 23rd, 1928; he had a gastric ulcer and had twice vomited a pint of blood, 16 days and again four days before admission. On Feb. 21st the stools were free of occult blood and thereafter he was given 8 oz. of whole liver daily for 25 days. The hæmoglobin remained steady at 50 per cent.; the red blood cells rose from 3,080,000 to 4,100,000, in contrast with a rise of only 200,000 in the 29 days before liver was given. There was never any reticulocyte response. Clinically his condition improved and he gained weight.

CASE 15 (Table I., Fig. 2).—A married man, aged 49, was admitted on Jan. 3rd, 1928, after three attacks of hæmorrhage in the preceding three weeks due to a gastric ulcer. Red blood count 1,800,000; hæmoglobin, 28 per cent.; colour-index, 0·77. A month later, on ordinary treatment,

TABLE I. (*Case 15*).

Date, 1928.	R.B.C.*	Hb.	C.I.	Ret.	W.B.C.	Date, 1928.	R.B.C.*	Hb.	C.I.	Ret.	W.B.C.
Jan.		%		%		Feb.		%		%	
3	1800	28	0·77	—	6000	13	2860	40	0·73	7·2	5300
Feb.						14	2780	42	0·77	7·4	5700
2	2200	30	0·68	1·2	5100†	15	2980	46	0·79	9·0	—
3	2200	30	0·68	1·2	4400	16	3010	44	0·73	4·8	4600
4	2280	34	0·77	1·4	4400‡	17	3080	—	—	6·8	4600
6	2330	31	0·71	1·4	4800	20	3200	50	0·78	3·6	4600
7	2570	34	0·69	2·2	4600	23	3360	50	0·69	3·2	4600
8	2800	40	0·73	5·2	5500	28	3930	54	0·69	1·4	4600
9	2740	38	0·70	6·6	6600	Mar.					
10	2770	38	0·70	4·8	5700	5	4380	58	0·67	2·4	5500
11	2740	37	0·68	6·2	3700	7	4180	58	0·70	1·4	7000

* Thousands. † Liver 4 oz. a day. ‡ Liver 8 oz. a day. C.I. = Colour-index.

the red blood count was 2,200,000 and the hæmoglobin 30 per cent. The stools being free of occult blood, he was given 4 oz. of whole liver, increased three days later to 8 oz. At the end of seven days his reticulocytes started to rise, maintaining a raised level for 18 days with a maximum of 9 per cent. This was associated with a gradual and definite rise in hæmoglobin to 58 per cent. in 33 days and of red blood cells to 4,180,000. Before liver was given the hæmoglobin had been constant at 30 per cent. for 30 days and the red blood cells had only risen by 400,000. The clinical improvement was equally striking, in spite of the fact that tubercle bacilli were present in the sputum and granular casts in the urine.

CASE 16 (Table II.).—A man, aged 35, was admitted on Jan. 27th, 1927, with eight years' history of indigestion and hæmatemesis on the day before admission, due to a gastric ulcer. In the 33 days before treatment with liver extract

TABLE II. (*Case 16*).

Date.	R.B.C.*	Hb.	C.I.	Ret.	W.B.C.	Date.	R.B.C.*	Hb.	C.I.	Ret.	W.B.C.
1927.		%		%		Jan.		%		%	
Nov.						16	3540	40	0·57	0·2	5500
29	1370	20	0·74	—	5500	18	3680	40	0·55	0·6	6200
Dec.						20	3740	38	0·51	0·2	4500‡
24	2600	30	0·54	—	5000	21	3530	42	0·60	0·2	2400
1928.						24	3900	40	0·51	0·4	6200
Jan.						28	4000	44	0·50	1·8	5300
4	3000	30	0·5	0·2	2000†	31	4210	42	0·50	0·4	4400
5	3000	28	0·46	2·0	3100	Feb.					
6	2960	26	0·45	1·8	2400	3	4300	44	0·49	1·4	5400
7	3250	30	0·46	0·6	2800	21	4400	60	0·68	—	4000
10	3280	34	0·43	0·6	4400	Mar.					
14	3170	36	0·58	0·2	3700	5	5490	68	0·68	—	4800

* Thousands. † Extract C = 500 g. fresh liver a day. ‡ Taken off extract; whole liver 8 oz.

his hæmoglobin rose from 20 to 30 per cent. and his red blood cells from 1,370,000 to 3,000,000. He had had iron and arsenic for 18 days. He was then given extract C, in a dose equivalent to 500 g. fresh liver, for 16 days. His hæmoglobin went up to 40 per cent. and his red cells to 3,700,000. Eight ounces of whole liver were then substituted for the extract, and in a further period of 15 days his hæmoglobin rose to 44 per cent. and his red blood cells to 4,200,000. He at once began to gain weight and put on 9 lb. in a fortnight. He has continued to eat liver at home, and his last count, on March 5th, showed 5,440,000 red blood cells and hæmoglobin 68 per cent.

CASE 17 (Table III., Fig. 3).—A man, aged 49, was admitted on Dec. 16th, 1927, with a long gastric history including hæmatemesis due to a duodenal ulcer three days before. In the 25 days after admission, although he had had arsenic for the last 12 days, his hæmoglobin only rose from 46 to

TABLE III. (*Case 17*).

Date.	R.B.C.*	Hb.	C.I.	Ret.	W.B.C.	Date.	R.B.C.*	Hb.	C.I.	Ret.	W.B.C.
1927.		%		%		Jan.		%		%	
Dec.						14	3500	54	0·77	0·9	6000
16	2840	46	0·82	—	3520	16	4060	60	0·75	0·6	9000
1928.						17	4080	58	0·72	0·0	10,000
Jan.						18	4050	58	0·72	0·4	6800
7	2800	50	0·86	—	3500	19	3730	54	0·72	0·8	3500
9	2860	50	0·86	0·2	3500†	20	3700	58	0·78	0·0	8000
10	2860	50	0·86	—	3500	21	4060	60	0·74	0·0	4100
11	3010	50	0·80	—	2400	23	4050	62	0·77	0·0	4400‡
12	3730	54	0·72	0·2	3000	24	3900	64	0·82	0·4	3300
13	3520	54	0·77	—	2700	26	4100	62	0·74	0·6	8100

* Thousands. † Extract E = 472 g. fresh liver. ‡ Taken off extract

50 per cent. and his red cell count was unaltered. He was then given a dose of a non-commercial extract (E) equivalent to 472 g. of fresh liver a day. In 16 days his hæmoglobin rose to 64 per cent. and his red blood cells from 2,800,000 to 4,100,000, a striking increase of over 1,000,000 compared to the preceding period when there was no alteration. There was no increase in the reticulocytes.

CASE 18.—A man, aged 32, with a gastric ulcer, was admitted on Feb. 20th, 1928; he had brought up a pint of blood 12 weeks previously. In the 18 days after admission his red cell count had only risen by 300,000 and his hæmoglobin had remained stationary. He was given a dose of extract C equivalent to 750 g. of fresh liver daily for seven days. There was no response, though in two cases of pernicious anæmia the same extract has given a definite result in five days. Owing to lack of extract he is now on whole liver.

CASE 19 (Table IV.).—A single woman, aged 24, had severe secondary hæmorrhage after amputation of the cervix for a congenital erosion. After the bleeding her red count was 2,360,000 and her hæmoglobin 48 per cent., and colour-index 0·87. She was immediately put on 8 oz. of whole

TABLE IV. (*Case 19*).

Date.	R.B.C.*	Hb.	C.I.	Ret.	W.B.C.	Date.	R.B.C.*	Hb.	C.I.	Ret.	W.B.C.
1927		%		%		Dec.		%		%	
Nov.						1	3200	70	1·1	0·4	9200
16	2800	48	0·85	0·2	13,500	2	3070	72	1·2	1·0	6200
17	2360	40	0·87	1·2	9000†	5	3290	74	1·15	1·2	7300
19	2200	44	1·0	2·8	7100	7	3600	76	1·04	—	5000
21	2780	48	0·85	2·4	6400	9	3560	76	1·0	1·4	6400
22	2930	52	0·89	3·6	5400	12	3560	76	1·0	0·4	5300
23	2830	60	1·0	0·2	4200	1928					
24	3100	60	0·96	2·0	5300	Jan.					
25	2870	66	1·1	1·8	5800	4	4020	80	1·0	·02	6600
26	2970	70	1·2	2·8	6200	11	4440	84	0·94	—	7700
28	2800	70	1·2	3·4	6200	8	4440	84	0·94	—	6600
29	2800	70	1·2	0·2	8000						
30	2500	68	1·3	0·8	7000						

* Thousands. † Liver 8 oz.

liver a day and her count rose steadily. On discharge, 25 days later, her hæmoglobin was 76 per cent. and her red blood cells 3,560,000. The patient continued to eat liver at home, and her last count showed red blood cells 4,900,000 and hæmoglobin 86 per cent. Though the colour-index was above 1 for some time, the films in no way suggested pernicious anæmia, and a test-meal showed normal gastric secretion.

CASE 20.—A married woman, aged 39, had bilateral general thrombosis and constant pyrexia after a panhysterectomy for severe menorrhagia. She was anæmic: red blood count 2,800,000, hæmoglobin 34 per cent., and colour-index 0·55. During this period she was put on

8 oz. of whole liver, which she took well for 20 days, but without response.

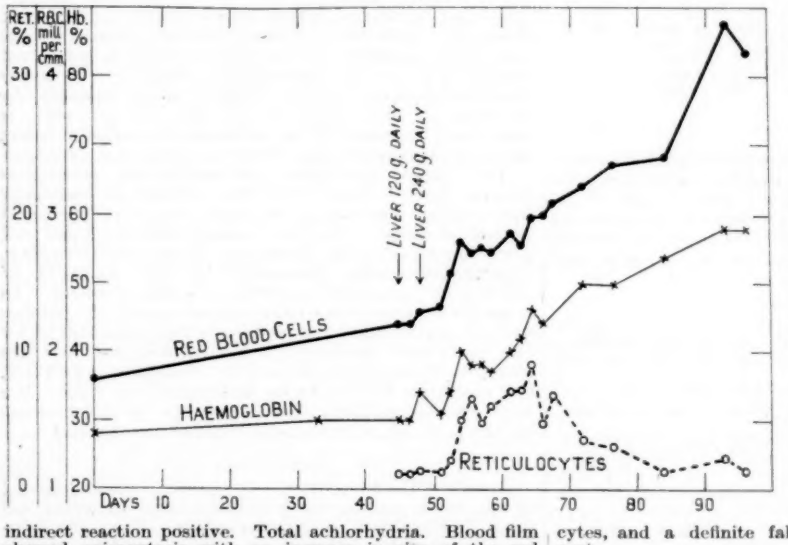
In none of the five gastric cases was there any complaint of pain or discomfort on taking the whole liver or extract, as might perhaps have been expected from patients taking as much as 8 oz. of meat one month after hæmorrhage. Fractional test-meals on a normal individual, comparing a plain milk meal with a milk meal containing a single dose of extract, showed that the addition of the extract made no appreciable alteration in the acid secreted. There seems therefore to be no contra-indication to treating gastric cases in this way. The results in Cases 15 and 17 are striking. In the first there was an increase of 28 per cent. in the hæmoglobin and an increase in the red cells of 2,000,000 in 33 days, as compared with an increase of 400,000 in the month before liver was given. In the second there was an increase of over 1,000,000 in the red cells, compared with complete absence of reaction before extract was given, while the hæmoglobin went up by 14 per cent. (see Fig. 3). This marked response shows that improvement in secondary anæmias is not due to the iron content of liver, as the extract is free from iron. A point of particular importance is the reticular rise in Case 15, as this has hitherto been considered peculiar to the response of pernicious anæmia. The fact that the other cases started at a level above 3,000,000 may explain the absence of increase in the reticular count, as the reticulocyte crisis is less marked in cases of pernicious anæmia starting treatment at this height. It is perhaps not fair to claim Case 19 as a success, since no long control period was allowed before starting treatment. It has been reported, however, because it shows that there may be considerable increase in bone-marrow activity without any appreciable alteration in the reticular count.

Anæmias Unassociated with Hæmorrhage.

The following five cases do not fall conveniently into any group, but seem worth recording to supplement the scanty data at present available of the effect of liver in such conditions.

CASE 21.—A man, aged 55, with aleukæmic lymphatic leukæmia. Wassermann reaction positive. Van den Bergh indirect reaction positive. Total achlorhydria. Blood film showed anisocytosis with an increase in size of the red cells compatible with pernicious anæmia. Red cells, 2,990,000; hæmoglobin, 62 per cent.; colour-index, 1·02. White blood cells, 7000; lymphocytes, 88·5 per cent. As a diagnosis of pernicious anæmia was at first thought possible he was given extract D in doses equivalent to 750 g. of fresh liver for 13 days. There was no appreciable alteration in the hæmoglobin or the red cell count, and the white count fell to 1500.

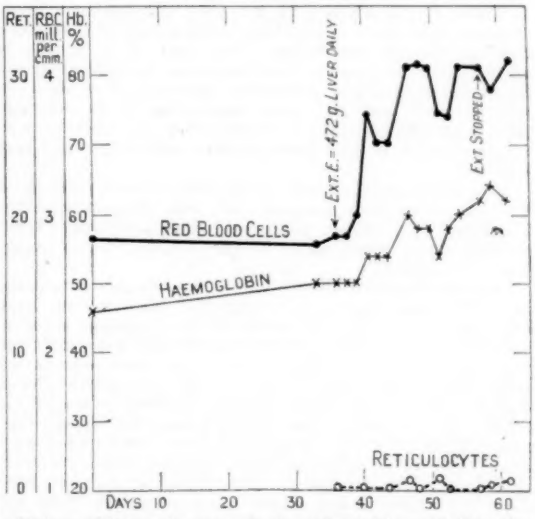
FIG. 2 (Case 15).



CASE 22.—A case of probable lymphatic leukæmia associated with Bence-Jones albuminuria. Van den Bergh reaction indirect positive. Wassermann reaction negative. Red blood cell count, 1,780,000; hæmoglobin, 30 per cent.; colour-index, 0·88. He was fed on 8 oz. of whole liver daily for a fortnight. There was no response.

CASE 23.—A man, aged 60, with carcinoma of the prostate and secondary deposits in bones. Admitted with a history of increasing anæmia, loss of weight, and indigestion for eight months. He had been treated with whole liver previously, as he was thought to be a case of pernicious anæmia. Wassermann reaction negative. Van den Bergh indirect reaction negative. Total achlorhydria. X rays of the stomach showed no evidence of growth. Red blood cell count, 1,860,000; hæmoglobin, 36 per cent.; colour-index, 1·0. White blood cell count, 5500. Differential white count showed constant presence of myelocytes and the size of the red cells was incompatible with a diagnosis of pernicious anæmia. He was given whole liver for 12 days but the blood picture remained unaltered. Later he was given extract C for 12 days in a dosage equivalent to 500 g. of fresh liver a day. The blood picture remained constant.

FIG. 3 (Case 17).



CASE 24.—A man, aged 49, was admitted on Jan. 23rd, 1928, with nervous symptoms which at first, in view of his blood count and test-meal result, were thought to be compatible with a rather atypical form of subacute combined degeneration of the cord. Further investigation favoured a diagnosis of syphilitic spastic paraplegia. Wassermann reaction positive. Van den Bergh indirect reaction negative. Total achlorhydria. Red blood cells, 3,900,000; hæmoglobin, 84 per cent.; colour-index, 1·08. White cells, 7700; film compatible with a diagnosis of pernicious anæmia, though in no way striking. He was given 8 oz. of whole liver daily for a fortnight. There was no rise in the red blood cells or the reticulocytes, and a definite fall in the hæmoglobin to 70 per cent.

CASE 25.—A single woman, aged 32, admitted as a case of severe secondary anæmia for investigation. She gave a six years' history of anæmia and weakness, and complained of piles, but no evidence was found on investigation to support this as an explanation of the blood picture. No menorrhagia, no blood in the stools, no source of sepsis detected. Total achlorhydria. Wassermann reaction negative. Positive indirect van den Bergh reaction. Red

blood count, 4,600,000; hæmoglobin, 37 per cent.; colour-index, 0·4. White blood cells, 7000. Films typical of a severe secondary anæmia. She was given 8 oz. of whole liver for 18 days. There was no change in the blood findings and she went home. A month later, having continued the liver diet, she looked and felt much better, and her red blood cell count was 5,830,000, with hæmoglobin 56 per cent. and white blood cells 4800. There was thus an increase of over 1,000,000 red cells and 20 per cent. in the hæmoglobin. Van den Bergh indirect reaction positive.

These five cases are in no way conclusive They suggest that liver is probably ineffective in leukæmia and advanced carcinoma, but that it is worth a prolonged trial in secondary anæmias with no obvious cause, as in Case 25. Since the addition of whole liver to the diet was the only treatment, it is perhaps legitimate to consider it responsible for the distinct improvement in the hæmoglobin and in the red cell count.

The differential counts of the white blood cells have not yet been fully worked out, but the eosinophilia described by other workers[5 6] has certainly been noticeable in some cases at the height of the bone-marrow response.

During the later period of the investigation special attention was paid to the weight of the patients, and all cases, whatever the cause of the anæmia, show a common and striking increase in weight, especially on taking whole liver. This may be in part associated with the improvement due to an increased blood supply, but in the most marked instance, Case 5, in which liver extract was being taken for pernicious anæmia, a gain of nearly 2 st. in one month was associated with but little improvement in the state of the blood. The figures given in Table V. suggest that liver may have some other function apart from its action on blood formation. At any rate it seems worth trial in cases of loss of weight that do not react to the more usual measures.

TABLE V.

Case.	Disease.	Treatment.	Weight gained.	Time in months.
1	Pernicious anæmia.	Extract.	12 lb. 1 oz.	1
2		,,	3 lb. 2 oz.	1
5		Extract and liver.	1 st. 10 lb. 12 oz.	1
9		Whole liver.	2 st.	3–4
12		,,	3 st. 3 lb. 3 oz.	4
13		,,	1 st. 5 lb. 6 oz.	1
14	Secondary anæmia.	,,	15 lb. 6 oz.	1
15		,,	7 lb. 9 oz.	1
16		Extract and whole liver.	8 lb. 13 oz.	1

My thanks are due to the physicians at University College Hospital, who have kindly allowed me to investigate the cases under their care, to Dr. C. R. Harington for his help in preparing an extract, and to Dr. G. W. Goodhart for his analyses of gastric contents and his constant advice throughout the investigation.

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TIDEMILLS MARINE HOSPITAL.—A new wing of this hospital for crippled boys at Bishopstone, Sussex, has been opened by Mrs. Warren, the donor. The extension includes wards, solaria, workshops, playroom, electric and artificial light departments. The hospital is an annexe of the Heritage Craft Schools at Chailey, and is situated on the beach in the bay between Newhaven Harbour and Seaford. The original buildings were the gift of Colonel Warren and had accommodation for 36 crippled boys; 70 can now be taken.

THE BLOOD AND PLASMA VOLUMES IN PERNICIOUS ANÆMIA.

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WHILE studying the effect of the Minot-Murphy liver diet in pernicious anæmia, we have had occasion to estimate the blood and plasma volumes in certain of our patients. Such estimations are of some importance in determining the results of treatment in the anæmias, since changes in the red cell count may be produced as readily by variations in plasma volume as by actual increases or decreases in the number of circulating red cells. Instances of plasma plethora have been reported in secondary anæmias by Keith, Hartwich and May, and others, and extraordinarily low plasma volumes have been noted in polycythæmia.[1] The modern dye methods appear to give consistent results in normal subjects. Calculated as cubic centimetres of plasma and blood per kilo of body-weight, the following average figures have been obtained in healthy individuals:—

	Plasma. c.cm.	Blood. c.cm.
Keith, Rowntree, and Geraghty (18 cases)[2]	50	85
Bock (5 cases)[1]	51	82
Seyderhelm and Lampe (11 cases)[4] ..	45	82
Berger and Galehr (30 cases)[5]	45	—

The findings in pernicious anæmia are conflicting. Keith [6] gives the results of 19 estimates in 12 cases. In six of these the plasma ranged from 52–63 c.cm. per kilo, the blood from 64–82; in the remaining cases high plasma volumes were found (66–81 c.cm. per kilo) with blood volumes of 77–106 c.cm. He noted that with an increase in red cells and hæmoglobin there was a tendency for the plasma volume to fall. Bock,[3] on the other hand, in seven determinations on seven patients, found an average plasma volume of 49 c.cm. per kilo, with an average total blood volume of 57 c.cm. per kilo. His lowest plasma volumes coincided with the lowest hæmoglobin percentages. Rusynak [7] found an increased plasma volume in eight out of ten patients, the increase bearing no apparent relationship to the corpuscular volume. It seems doubtful whether in this chronic type of anæmia the circulatory fluid, depleted by loss of red cells, is restored to normal by an increase in plasma volume, although this is the rule after an acute hæmorrhage.

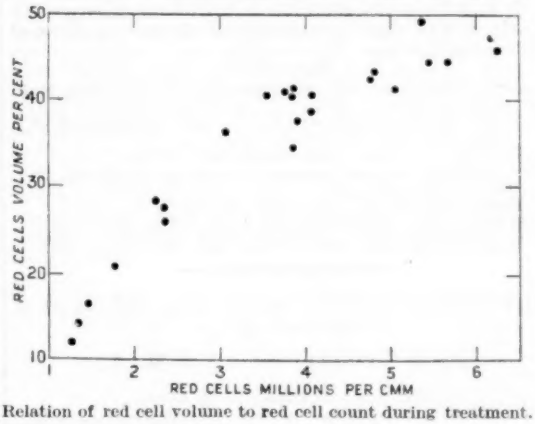
The rapid remission obtainable in pernicious anæmia by treatment with liver affords an unusually favourable opportunity for study of the red cell and plasma volume. We have employed the vital red method suggested by Rowntree, Keith, and Geraghty, coagulation being prevented by the addition of 1·5 mg. of potassium oxalate per c.cm. of blood. As a matter of interest we have also estimated the plasma protein percentage, the protein being precipitated by the tungstate method of Folin, washed, and its nitrogen content determined by Kjehldahl's method, the resulting figures being multiplied by 6·25. We have also determined the plasma cholesterol content by the method of Myers and Wardell (see table.)

Comments.

Results of the Liver Diet.—In the eight cases detailed in the table and in three further cases in which we made no blood volume determinations the results have been uniformly satisfactory. The rapidity of the response to treatment has varied, but there was immediate subjective benefit even in one patient whose objective improvement was delayed. The number of cases which we have studied is, however, small, and in view of the well-known frequency of spontaneous remissions and of the fact that none of our patients have been under observation for more

than 11 months we should not be justified in expressing any opinion as to the ultimate value of the treatment. The final red cell counts are higher than those which we have observed by any other method of treatment, and the uniform fall in the colour-index may be regarded as a favourable sign. The relationship of cell volume to cell count is shown in the accompanying graph, and runs a course similar to the colour-index. With the exception of one case all our patients received 6–7 oz. of liver per diem. This patient had been discharged from hospital on arsenic, but having discovered the value of the liver treatment from a perusal of the daily press he had taken 8 oz. of liver per week at a single meal. On this relatively small allowance his blood presented as satisfactory a picture as any of our more intensively treated patients.

The Plasma and Blood Volumes.—The absolute plasma volumes show a considerable degree of constancy in each patient during the progress of treatment, with a slight tendency to fall during the later stages of improvement. A definite fall in plasma volume relative to body-weight may occur, but such falls are mainly the reflection of the increase in body-weight which occurs on the liver diet; patients suffering from pernicious anæmia are usually considerably below their normal weight when they first come under observation. A considerable gain in weight occurred in all our patients with one exception. There appears to be a definite tendency to compensate for the large diminution in the total blood volume, due to the fall in the red cell volume in this disease, by a corresponding increase in the plasma. The plasma volume remains normal. The total quantity of circulating fluid is allowed to fall to a low level during the acuter stages of the malady, and no such outpouring of water from tissues to blood as is seen in red cells to a practically constant amount of plasma. The increase in percentage of red cell volume, on centrifuging and in hæmoglobin estimations, gives therefore an accurate index of the actual increase in red cell substance and hæmoglobin during the course of treatment. In drawing deductions from the red cell count allowance has to be made for the well-marked tendency to diminution in the average size of the red cells which accompanies improvement.



Relation of red cell volume to red cell count during treatment.

Plasma Protein and Cholesterol.—The plasma protein findings are of little interest. During the acute stage the plasma protein percentage is slightly subnormal (6·92 per cent. in 19 normal controls). As the patient improves a normal figure is regained. The plasma

No.	Date.	Plasma volume.	Blood volume.	Plasma per kilo.	Blood per kilo.	Weight, kilos.	Plasma protein.	Plasma cholesterol.	Red corpuscles.	Red cell count in millions.	Hb.	Colour index.	—
		c.cm.	c.cm.	c.cm.	c.cm.		%	%	%				
1	30/5/27	2703	3421	50·8	64·3	53·2	6·22	0·106	21·0	1·78	42	1·18	Liver diet, 1/6/27.
	13/6/27	2920	4583	52·3	82·1	55·8	6·60	0·172	36·3	3·01	68	1·13	
	27/6/27	2916	4967	50·6	86·2	57·6	6·63	0·169	41·3	3·85	78	1·01	
	5/10/27	2751	5212	47·2	89·7	58·1	7·11	0·212	47·2	6·16	88	0·72	
2	21/6/27	2818	3387	52·9	63·6	53·2	6·47	0·138	16·8	1·47	36	1·24	,, 22/6/27.
	3/8/27	2775	4664	49·5	83·2	56·0	6·60	0·182	40·5	3·80	82	1·08	
	26/3/28	2587	4652	40·4	73·3	64·0	6·78	0·260	44·4	5·43	92	0·85	
3	22/9/27	2938	3329	49·9	56·6	58·8	6·51	0·117	12·0	1·28	28	1·10	,, 23/9/27.
	12/10/27	3029	4638	50·3	77·0	60·2	6·54	0·130	34·7	3·84	62	0·80	
	31/10/27	3244	5507	51·2	87·0	63·3	7·27	0·140	41·1	5·01	70	0·70	
	24/2/28	2942	5802	46·5	91·8	63·2	6·95	0·152	49·3	5·33	90	0·85	
4	6/2/28	3532	6398	39·3	71·2	89·8	6·82	0·198	44·8	5·66	90	0·79	Liver since 7/3/28.
5	15/6/27	2703	3764	62·5	87·1	43·2	6·42	0·126	28·2	2·23	50	1·13	Liver diet 16/6/27.
	15/11/27	2257	3818	44·2	74·8	51·0	7·56	0·184	40·4	4·02	80	0·99	
	29/2/28	2401	4168	45·8	79·6	52·3	6·95	0·160	42·4	4·75	88	0·92	
6	10/10/27	2800	3872	44·5	61·5	62·9	6·65	0·156	27·7	2·55	52	1·02	,, 12/10/27.
	4/11/27	2947	4815	45·9	75·0	64·2	6·23	0·156	38·8	4·04	72	0·90	
7	26/4/27	3550	5976	55·9	96·0	63·5	6·83	0·100	40·6	3·53	72	1·01	,, 31/3/27.
	5/5/27	3531	5649	55·6	88·9	63·5	6·60	0·117	37·5	3·90	76	0·97	
	26/1/28	3105	5495	50·4	89·2	61·6	7·13	0·120	43·5	4·80	80	0·83	
8	9/8/27	3183	5389	46·2	78·5	68·8	6·85	0·161	41·0	3·76	74	0·98	,, 6/7/27.
	25/11/27	2924	5414	39·4	73·0	74·1	7·00	0·309	46·0	6·25	74	0·59	
9	25/5/27	2833	3317	76·9	90·1	36·8	6·54	0·128	14·6	1·33	34	1·25	Arsenic only.
	24/6/27	3303	4463	77·3	104·5	42·7	6·37	0·085	26·0	2·35	45	0·95	

after acute hæmorrhage occurs in this chronic type of anæmia. The relatively slight reduction in the plasma protein percentage confirms the absence of an hydræmic plasma plethora.

The plasma volume per kilo of body-weight is approximately normal in the majority of cases. This relationship cannot, however, be regarded as constituting a very satisfactory standard, since the volume of plasma is unlikely to increase in proportion to the adipose tissue, which is relatively poorly vascularised. In consonance with this view the fattest patient in our series shows the lowest and the thinnest the highest volume of plasma per kilo of body-weight. Improvement seems to be marked by the addition of cholesterol before treatment shows the fall characteristic of pernicious anæmia. A steady increase in this substance occurs during treatment with liver, and in some cases abnormally high values are ultimately attained. The cholesterol rise tends to show a rough parallelism to the increase in red cells, the highest red cell counts usually coinciding with the highest cholesterol figures. This increase in cholesterol is not in any way specific, since it is seen also in other forms of anæmia during improvement. It has been noticed, for instance, in splenic anæmia accompanying the rise in the red cell count that follows splenectomy. Liver itself is said not to be particularly rich in cholesterol, and there seems therefore no reason to

believe that the rise in the plasma cholesterol is the direct result of cholesterol ingestion. Unfortunately, we have had no opportunity of observing the effect of active but cholesterol-free liver extract, since no untreated cases have presented themselves since the extract became available to us.

It may be mentioned that in five of our cases gastric analyses still show complete achlorhydria in spite of clinical recovery.

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THE RETICULOCYTE CRISIS AND THE SERUM BILIRUBIN IN PERNICIOUS ANÆMIA.

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THE reticulocyte count constitutes a very important means of ascertaining early whether or not a given case of pernicious anæmia will respond to treatment by liver. A rise in the proportion of reticulocytes to red cells occurs within three days of the commencement of treatment in cases responding satisfactorily. Within a week the reticulocytes should have reached their maximum, which may be over 30 per cent. of the red cells; the number of reticulocytes then falls rapidly and within three weeks from the beginning is approaching normal. An increase is obvious before the increase of the ordinary red cells has become definite. In order to avoid missing the "crisis," counts must be made at the commencement of treatment at intervals of less than three days. The method used in the present instance was that described by Todd,[1] which has the advantage of giving a permanent preparation.

A fall in the serum bilirubin is another early manifestation and would probably indicate response to treatment as well as the reticulocyte count. For this estimation, however, several cubic centimetres of blood are necessary, while for the reticulocyte count enough can be obtained from a needle prick. The sudden and dramatic drop in the bilirubin content of the serum is an obvious indication that one factor in the response to treatment is the cessation of abnormal hæmolysis. The reticulocyte crisis early in treatment is an indication that numerous young red cells are thrown into the circulation as a result of treatment. That the progressive improvement under treatment is not due to the continuation of this inflow is shown by the early drop of the reticulocyte percentage to normal, though the rate of increase of the red cells remains steady. Both the cessation of the hæmolysis and the phenomenon of the reticulocyte "crisis" appear to be capable of explanation on the suggestion put forward by Peabody,[2] who has pointed out that in the relapse stage of pernicious anæmia the bone-marrow is packed with red cells of immature megaloplastic type which appear to be incapable of completing their development. If thrown into the circulation in this state, they are rapidly destroyed. He suggests that the action of the liver is to supply a stimulus enabling these cells to reach maturity. The reticulocyte crisis may be looked upon as representing an act of catharsis on the part of the bone-marrow, after which cell production proceeds in a normal manner.

[1] Todd, J. C.: Clinical Diagnosis of Laboratory Methods, London, 1923, p. 377.
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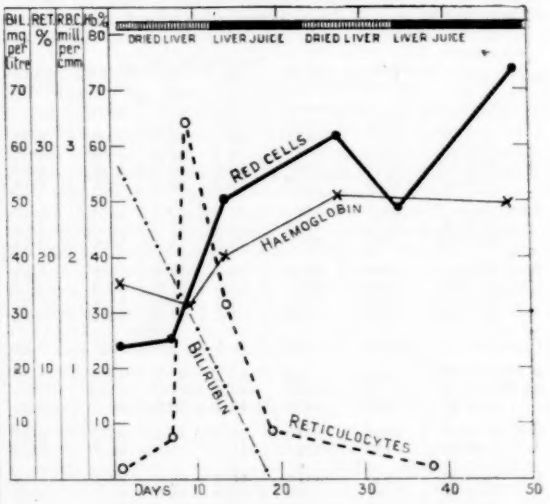
Clinical Details.

CASE 1.—Female, aged 61. The patient herself gave a history of only six weeks' abdominal pain and vomiting; her medical practitioner, however, stated that she had been very pale and asthenic for at least three years. On admission on Feb. 18th, 1928, patient showed the characteristic icteric tinge of the skin; her mucous membranes were very pale and she complained of abdominal pain and intermittent vomiting, bearing no relationship to food. Blood picture: hæmoglobin, 35 per cent.; red cells, 1,200,000; colour-index, 1·25; white cells, 2250; polymorphonuclears, 66 per cent.; lymphocytes, 32 per cent.; monocytes, 2 per cent.; reticulocytes, 1·1 per cent. of red cells. Anisocytosis and poikilocytosis present but not marked; no normoblasts or megaloblasts. Icterus index of serum, 36; bilirubin, 56 mg. per litre. A fractional test-meal revealed absence of free hydrochloric acid.

The patient was started on a daily dose of 2 oz. of a dried liver preparation (Hepatopson) daily. A week later her clinical condition was unaltered. Blood picture: hæmoglobin, 31 per cent.; red cells, 1,170,000 per c.mm.; colour-index, 1·3; white cells, 5950 per c.mm.; many nucleated red cells; reticulocytes, 32 per cent. of red cells. On March 1st patient was put on 2 oz. of ox-liver juice daily. By this time clinical improvement was apparent. Blood picture on March 3rd: hæmoglobin, 40 per cent.; red cells, 2,480,000 per c.mm.; colour-index, 0·88; white cells, 2250 per c.mm.; differential count: polymorphs, 44 per cent.; lymphocytes, 49 per cent.; monocytes, 6 per cent.; eosinophils, 1 per cent.; reticulocytes, 15·8 per cent. of red cells.

By March 6th the bilirubin in the serum had fallen too low for estimation. By March 8th the reticulocytes had fallen to 4·3 per cent. of the red cells. The progress of this case from Feb. 18th will be seen in Fig. 1. The reticulocytes fell

FIG. 1.

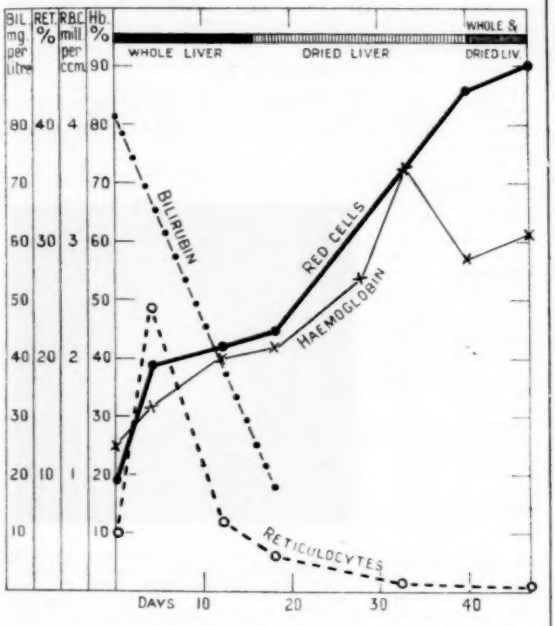


consistently. A drop in both red cells and hæmoglobin, between March 16th and 23rd corresponds to a period when the supply of liver juice ran out and the patient was put back upon an insufficient dosage of the dried liver.

CASE 2.—Male, aged 62, complained of increasing weakness for 12 months, breathlessness on exertion, loss of appetite, vomiting, and abdominal pain. He had been treated for gastric ulcer. On admission on Jan. 18th, 1928, he showed a marked icteric tinge of the skin, his mucous membranes were very pale, and he was very asthenic, with numbness and weakness of the legs. Blood picture: hæmoglobin, 25 per cent.; red cells, 970,000 per c.mm.; colour-index, 1·3; white cells, 3750 per c.mm.; differential count: polymorphs, 60 per cent.; lymphocytes, 38 per cent.; monocytes, 2 per cent; a good deal of anisocytosis and poikilocytosis of red cells; normoblasts, 1 per cent. of white cells; reticulocytes, 5 per cent. of red cells; icterus index of serum, 17; bilirubin content of serum, 81 mg. per litre. Treatment was initiated on Jan. 21st by the administration of 8 oz. of whole liver daily, according to the diet given below. A fractional test-meal revealed complete absence of free hydrochloric acid.

By Jan. 25th, only four days later, the clinical condition showed marked improvement. Blood picture: hæmoglobin, 32 per cent.; red cells, 1,840,000 per c.mm.; colour-index, 0·88; white cells, 7000 per c.mm.; reticulocytes, 24·1 per cent. of red cells. Feb. 2nd: Blood picture: hæmoglobin,

FIG. 2.



40 per cent.; red cells, 2,070,000 per c.mm.; colour-index, 1·0. Feb. 5th: Reticulocytes, 6·4 per cent.

On Feb. 6th patient was put on 2 oz. of dried liver (Hepatopson) daily. On Feb. 8th, blood picture: hæmoglobin 43 per cent.; red cells, 2,360,000 per c.mm.; colour-index, 0·91; white cells, 6050; differential count: polymorphs, 69 per cent.; lymphocytes, 22 per cent.; monocytes, 7 per cent.; eosinophils, 2 per cent.; icterus index of serum, 11; bilirubin content of serum, 18 mg. per litre; reticulocytes, 2·8 per cent. of red cells. The progress of the case is seen in Fig. 2.

Progress was maintained until the patient left hospital on March 1st. One week later the hæmoglobin had fallen from 72 to 62 per cent., while the red cells remained almost stationary at about 4,500,000 per c.mm. The patient was found to be taking an insufficient dose of the dried liver; on increasing the dose progress was continued as shown on the chart.

LIVER FEEDING IN MULTIPLE INFECTIVE ARTHRITIS.

BY VINCENT COATES, *M.C.*, M.D. CAMB., M.R.C.P. LOND.,
PHYSICIAN TO THE ROYAL MINERAL WATER HOSPITAL, BATH;
AND
J. L. DELICATI, L.M.S.S.A. LOND.,
RESIDENT MEDICAL OFFICER OF THE HOSPITAL.

AT the present time data in respect of liver in the treatment of secondary anæmia are somewhat scanty. We have therefore studied the effect of liver feeding in infective arthritis in which moderately severe to severe secondary anæmia is an almost constant feature.

The cases chosen fall into two clinical groups: (*a*) those in which joint lesions are gross, and (*b*) those in which they are less defined. Sixteen cases are reported upon (seven men and nine women). The most severe anæmia gave the following blood estimation: red blood corpuscles, 2,080,000; hæmoglobin, 58 per cent.; polymorphonuclears, 40 per cent.; lymphocytes, 56 per cent. The least severe showed: R.B.C., 4,832,000; Hb., 74 per cent.; polymorphs, 57 per cent.; lymphocytes, 39 per cent.

No other treatment for anæmia was given before or during the investigation. The amount of fresh liver varied from 5 to 8 oz. daily, according to the individual's ability to ingest this, and it was given for ten days. One patient who was treated with liver tablets had 78 5-gr. tablets in three weeks. The patients on fluid extract of liver took half an ounce twice a day for three weeks. The results were as follows:—

Group A (joint lesions, gross).

1. Six cases in this group had fresh liver with the ordinary hospital diet. Five of them showed marked improvement and one retrogressed. The average results of the five cases of marked improvement were as follows:—

	From	To
Red cells	3,678,000	4,486,000
Hæmoglobin	64·4%	71%
White cells	8,000	10,816
Polymorphs	49·8%	56·2%
Lymphocytes	45·8%	41·4%

2. One case, on liver tablets with ordinary hospital diet, retrogressed.

3. Three cases were treated with fluid extract of liver and given the ordinary hospital diet. Two showed marked improvement and one case remained in statu quo. The average results of the two cases were as follows:—

	From	To
Red cells	4,080,000	4,712,000
Hæmoglobin	64%	80%
White cells	4,480	14,880
Polymorphs	57%	62·5%
Lymphocytes	37·5%	32·5%

Group B (joint lesions less definite).

1. One case had fresh liver and ordinary hospital diet. This case showed marked improvement. The results were:—

	From	To
Red cells	3,960,000	4,496,000
Hæmoglobin	66%	70%
White cells	12,000	6,400

2. Three cases had fluid extract of liver and ordinary hospital diet. Two of them markedly improved and one retrogressed. The average results of the two cases were as follows:—

	From	To
Red cells	4,264,000	5,100,000
Hæmoglobin	74%	69%
White cells	16,480	10,080
Polymorphs	48·5%	62·5%
Lymphocytes	45%	33%

3. Two cases had fluid extract of liver and a Minot-Murphy diet; one showed marked improvement, and one retrogression. The results of the former were:—

	From	To
Red cells	3,232,000	5,072,000
Hæmoglobin	60%	62%
White cells	9,600	10,880
Polymorphs	76%	60%
Lymphocytes	18%	29%

From the small number of cases reported it would appear that certain patients suffering from infective arthritis benefit extraordinarily, in respect of improvement in the blood count, after liver-feeding, whereas others are untouched. A feature of note is that of the 11 cases which improved, seven showed a marked rise in the polymorphonuclear count with a corresponding fall in the lymphocytes, whereas of the four cases which retrogressed three showed the converse.

We wish to thank the laboratory staff of the hospital for their essential help given in this investigation, and Messrs. Armour and Co. for supplying gratis the fluid extract and tablets made by that firm.

DIAGNOSIS OF PERNICIOUS ANÆMIA BY "BLOOD-HALOES."

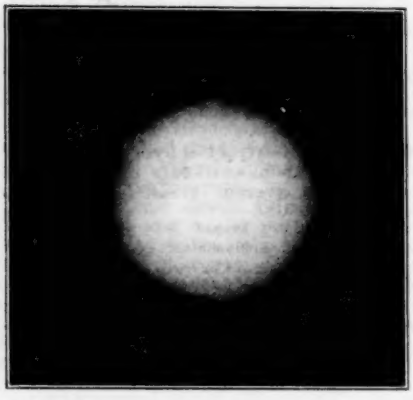
By FRANK C. EVE, M.D. Camb., F.R.C.P. Lond.,
SENIOR CONSULTING PHYSICIAN, ROYAL INFIRMARY, HULL.

THE researches of C. Price-Jones, A. F. Hurst, and others have established that the most constant feature of pernicious anæmia (and often of subacute combined spinal degeneration) is the increase in average diameter of the red cells of the blood. Measurement of 500 cells involves, however, four hours' work with a very costly projection apparatus. Dr. A. Pijper, of Pretoria, recently sent me his paper [1] describing an ingenious method of using a dried blood film as a diffraction "grating." Using a train of three lenses, he conducted the beam of light through a hole in the wall of a dark room. When a blood smear was interposed a "spectrum" was produced, the size of which was inversely proportional to the red cell diameters. I thought the method would be very valuable clinically if it could be simplified. I found that a standardised apparatus, costing £15—i.e., the Thornton-Pickard reflex camera, 1927, F.A., 4·5—answered the purpose admirably. It is also excellent for photographing patients.

Method.

The camera is extended to its full length and brought near enough (2 feet) to focus the filament of a "focus-lamp" (e.g., Osram, 100-watt). The lamp should always be pointed straight at the camera. When a thin blood smear is placed in front of the lens, the image of the lamp is surrounded by two concentric coloured haloes. A home-made celluloid scale shows their diameters in normal blood to be 32 and 65 mm. I measure to the outer edge of the inner halo. In pernicious anæmia, the haloes are smaller (25 to 29 mm.), hazy edged, and usually badly coloured. That is because the red cells are larger and irregular in shape and size so that the resulting haloes and colours overlap. Normal red cells, being round and equal, cause surprisingly efficient "interference" (alternate reinforcement and cancelling) of the light waves.

FIG. 1.



Blood halo of normal diameter (32 mm.) from a cured pernicious anæmia; brightly coloured and sharply edged (natural size). The red cell diameters were also normal (7·2 μ, Knott).

The haloes are easily photographed (10 seconds at F. 16) but are best measured by eye. Blood films of one cell thick are easily secured if the top glass slide is lightly pushed (like a plane) instead of being pulled (as is usual). The slide must first be well rubbed with ether or alcohol. That part of the film which yields the largest halo must always be selected. Fixation is unnecessary, even for posted films. A normal blood film held up to a bright light shows a play of irridescent colours which are not seen in advanced pernicious anæmia. I conclude that the lens coördinates this diffuse irridescence into a halo. Sparrow's blood, with its oval cells, yields neither irridescence nor haloes.

With a large portrait camera I could produce larger haloes, but what I gained in size I lost in sharpness and hence in accuracy of measurement.

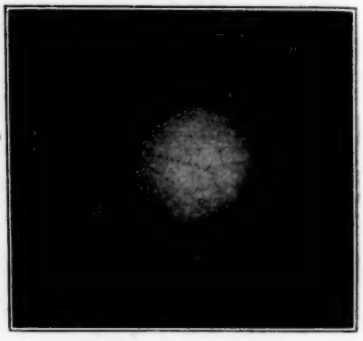
[1] THE LANCET, 1924, ii., 367.

The camera method may show (1) ill-defined and colourless haloes; this means that the red cells are irregular in size or shape. (2) The halo may be sharp and well-coloured but smaller. This is diagnostic of pernicious anæmia or subacute combined degeneration without poikilocytosis. A hazy colourless halo may be given by the poikilocytosis of chronic secondary anæmia, but unless it is also smaller than that of normal blood it must not be relied on as diagnostic of pernicious anæmia.

Clinical Cases.

CASE 1.—A young man with total paraplegia, achlorhydria, and sore tongue. The blood was declared to be normal ("slight secondary anæmia"), but the halo was too small (29 mm.) and the red cells too large (7·9 μ). Hence subacute combined degeneration was diagnosed. The paraplegia recovered completely after treatment with hydrochloric acid, although the haloes remained subnormal. After six months' treatment by liver (½ lb. daily, plus hydrochloric acid) the halo increased to normal (34 mm.), showing that blood cells of normal size were being turned out by the bone-marrow factories. The halo method has given me the same result in four cases of pernicious anæmia after liver diet.

FIG. 2.



Blood halo from a pernicious anæmia showing the diagnostic small (26 mm.), colourless, mossy-edged halo (natural size). The red cells were enlarged (7·55 μ, Knott) and irregular in shape and size.

CASE 2.—A lady of 64 with albuminuria and pyuria of long standing associated with anæmia and large spleen. The diagnosis lay between pernicious anæmia with secondary kidney trouble and primary renal disease with secondary anæmia. A normal halo (33 mm.) decided against pernicious anæmia.

CASE 3.—A lady, aged 65, had subacute cholecystitis with fever and anæmia (Hb. 50 per cent.). The differential diagnosis was cholecystitis with secondary anæmia or pernicious anæmia with cholecystitis due to underlying achlorhydria. The small halo (27 mm.) confirmed by a colour-index of 2 settled the matter.

CASE 4.—A man of 53 complained of paræsthesia of his extremities for six months. He was neither fat nor pale; Hb. 85 per cent. The only diagnostic evidence was pyorrhœa and a blood halo of 25 mm. This suggested a diagnosis of pernicious anæmia with subacute combined degeneration, which was confirmed by his sudden death from heart failure [2] and "speckled" heart. Without a quick and easy blood method I should not have diagnosed this case correctly.

Analysis of Halo Diameters of First 55 Cases.

Mouse and hare blood headed the list with haloes of 42 mm. and 37 mm.—their red cells being the smallest. Next at 36 mm. came four infants, aged 2 months to 1½ years. Haloes of 34 mm. were given by the blood of two normal children, a case of Marie's ataxia and one of polycythæmia. Haloes of 33 and 32 mm. diameter were all from normal cases. Two out of five haloes measuring 31 mm. and two measuring 30 mm. were cases of subacute combined degeneration; two more of 30 mm. had pernicious anæmia in the family. The blood of four patients gave haloes measuring 29 mm.; one had pernicious anæmia, another was a child of 2 with grave anæmia, a third had leukæmia, and the fourth was a case of subacute combined degeneration of the cord before treatment with liver. Of the four 28 mm. haloes, three came from cases of pernicious anæmia, one of whom also had subacute combined degeneration; the fourth

[2] Coombs, C. F.: Brit. Med. Jour., 1926, ii., 185.

had bad migraine with achlorhydria, anæmia (70 per cent.), glossitis, and enlarged red cells (8·8 μ measured in 1925 under Dr. A. F. Hurst) and was considered to be on the verge of pernicious anæmia, though without hæmolysis. 27 mm. haloes were given by three cases, two of these pernicious anæmias and one a grave anæmia in a child of 2 cured by liver. The four 26 mm. haloes all came from cases of pernicious anæmia, of whom one also had subacute combined degeneration. There were two 25 mm. haloes both from patients with pernicious anæmia, one of whom had also subacute combined degeneration.

Thus, according to my first 55 cases (confirmed by many later ones), normal adult haloes were nearly always 32 or 33 mm. The 17 haloes of 29 mm. or less were nearly always misty-edged and badly coloured; they all indicated pernicious anæmia with or without subacute combined degeneration of the cord.

Halo Method Checked by Direct Cell Measurements.

Dr. F. A. Knott very kindly lent me four films in which he had measured the red cell diameters.

Film 1 was from a pernicious anæmia patient who had been cured by liver and hydrochloric acid. The red cells were round and equal and of practically normal size (7·2 mm.). Accordingly, the halo was sharp, brightly coloured, and of normal diameter (32 mm.). (Fig. 1.)

Film 2 came from a pernicious anæmia; the cells were very irregular in shape and size and were enlarged (7·55 μ). Consequently the halo was small (26 mm.), colourless, and mossy-edged; pernicious anæmia could be diagnosed at a glance. (Fig. 2.) This case illustrates the important clinical point that an increase of cell diameter of 5 per cent. is magnified into a decrease of halo diameter of 20 per cent.

Films 3 and 4 were from chronic secondary anæmias (hæmoglobin 60 and 50 per cent.) with poikilocytosis. The cell diameters were 7·1 μ and 6·9 μ, and the haloes were pale and hazy, measuring 33 mm. in both films but difficult to measure in (4).

Summary.

The investigation of 60 cases has convinced me that the camera blood-halo method is quick, easy, and reliable, yielding in cases suspected of pernicious anæmia and subacute combined degeneration of the cord decisive clinical information, which is otherwise available only with difficulty and labour.

Clinical and Laboratory Notes.

A NOTE ON SOME INTESTINAL BACTERIA ISOLATED FROM PACKED DATES.

BY R. F. HUNWICKE, B.SC. LOND., A.I.C.,
AND
G. N. GRINLING, F.I.C.

WHEN examining the stools from a severe case of colitis in a young child, we isolated a coliform bacillus having almost the same characters as those given for *B. coli tropicalis* of Cast in Hewlett's "Manual of Bacteriology" (6th ed., p. 428). The distinguishing characteristics of this type are that it is absolutely non-motile, does not ferment dulcite, adonite, or inosite, and ferments sorbite. The non-fermentation of adonite and inosite distinguishes it from *B. lactis aerogenes*, to which it is very similar. The organism was found in practically pure culture in the stools, the only other type found being a short-chain streptococcus, which was not abundant.

It was suggested to us that there might possibly be an association between the presence of this coliform bacillus in the stools and some packed dates which the child had consumed before the onset of the colitis. We were not able to obtain any of the dates from the fancy box which had actually been in use immediately before the attack, but we were supplied with a similar box from the patient's home. The box contained Tunis dates of a well-known brand which had been repacked in France. The dates were examined by cutting off a number of small pieces with a sterile knife and placing them with sterile forceps in tubes of MacConkey's bile-salt broth furnished with Durham tubes. All the tubes on incubation showed abundant production of gas. They were plated to lactose bile-salt agar. At this stage of the inquiry we were only concerned with the possible identification of strains similar to the organism isolated from the stools, and though several intestinal strains were found, preliminary sorting tests showed only one which was obviously similar. The two strains were worked out fully and were found to be very closely related, though not identical.

There seems very little doubt that the severe colitis could be attributed to the organism isolated from the stools. The fact that it was found in the stools in practically pure culture is certainly significant. We have been informed in a private communication that cases of colitis which occurred in the Near East during the European War were attributed to *B. lactis aerogenes*.

The fact that lactose-fermenting, non-sporing bacteria were so readily isolated from the sample of dates seemed worthy of further investigation, and we obtained a number of samples of "block" dates—i.e., dates in bulk—and of packed dates. These were examined by the addition of small fragments to tubes of MacConkey's broth in the manner described above. Tubes which showed production of gas were plated to lactose bile-salt agar and typical pink colonies were picked off, taken into broth, replated, and studied in detail. In examining these further samples we isolated all lactose-fermenting types, as the further inquiry was directed to the possibility of general contamination of dates by intestinal organisms.

We examined 11 samples in all, four being block dates and seven dates repacked in fancy boxes. The block dates were all free from intestinal bacteria, no growth being obtained in MacConkey broth from any sample. From the packed dates a bacillus of intestinal type was isolated in every case except one, in which a lactose-fermenting yeast was present.

The seven strains isolated (including that obtained from the stools) were studied in detail, fermentation tests with 15 sugars and alcohols being carried out in every case. All the organisms were Gram-negative. All fermented lactose with the production of acid and gas, and none liquefied gelatin or blood serum. Litmus milk gave acid and clot in every case. The non-fermentation of adonite and inosite was constant, but marked variations were shown in the fermentation of raffinose. Three strains produced acid and gas from this sugar, two produced acid only, and two showed no fermentation. Four of the strains produced acid and gas from sorbite only after incubation for three or four days. Two strains showed slight motility in 24-hour broth, two were actively motile, and three were absolutely non-motile.

Discussion.

When dates are repacked in Europe a solution of glucose is sprayed over them. This provides a sticky surface to which bacteria would be likely to adhere and which would presumably form a good pabulum for the growth or preservation of fermentative organisms. The block dates, before being sprayed with glucose, present a smooth surface less likely to offer a suitable pabulum to bacteria. It is probable that the dates are handled in the course of packing, and that bacteria are introduced in that process. These observations afford an example of the deceptive appearance of cleanliness which may be conferred on a foodstuff by attractive packing. All the packed dates were attractive and hygienic in appearance, some even being wrapped in transparent wrappings. The block dates appeared dirty and unpleasing to the

eye, yet they proved entirely free from the bacteria with which the packed dates were contaminated.

Whether any danger to public health is involved in the presence of these coliform bacilli on the surface of packed dates is a matter for serious consideration. There is the possibility of specific infection, as in the case of colitis which formed the starting-point of this investigation, and there is also the more general, and perhaps more important, consideration that these intestinal bacteria may indicate fæcal contamination, with the concomitant possibility of epidemic dysentery or typhoid fever. Whether such fæcal contamination occurs, and if so, how, could only be settled by an investigation of packing methods on the spot.

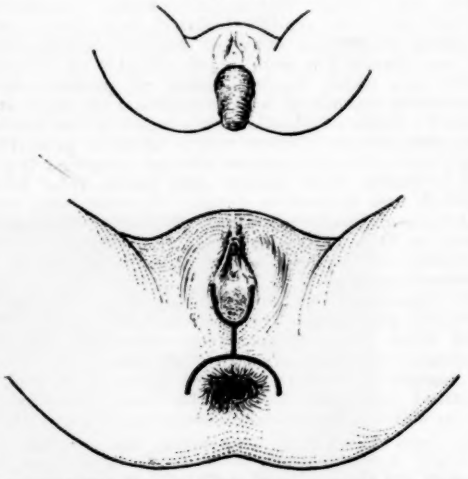
Our thanks are due to Dr. Hector M. Walker (Harrow) for giving us the opportunity of examining the stools from the case of colitis under his care, for obtaining for us most of the samples of dates, and for valuable criticism and advice in interpreting the results of the investigation, which was carried out in the Glaxo Research Laboratories.

NOTE ON AN OPERATION FOR THE CURE OF PROLAPSE OF THE RECTUM IN THE FEMALE.

BY FREDERICK J. MCCANN, M.D. EDIN., F.R.C.S. ENG.

THE failures which I have seen following attempts to cure rectal prolapse in the female prompted me to devise an operation which aimed at the restoration of the retentive mechanism without which the bowel would prolapse with each act of defæcation. The integrity of this retentive mechanism depends on the power and the coördinated action of the levatores ani and sphincter ani muscles, whilst in certain individuals there is a congenital muscular weakness which predisposes to prolapse of the rectum. I have been enabled to observe the results for some years after my operation (in one case 13 years) and so satisfy the *time test*, which is the best test of the efficacy of such operations.

FIG. 1.



The small diagram shows the rectal prolapse. The larger diagram indicates the line of the incision.

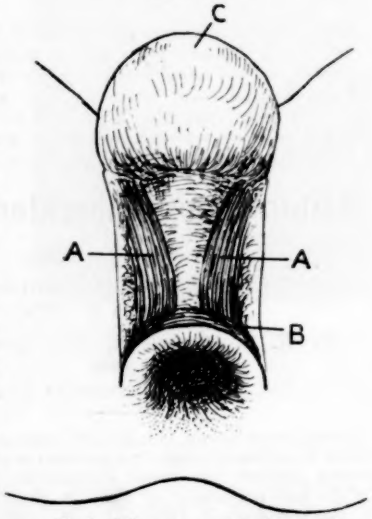
The operation which I perform appears suitable for the majority of the cases.

Preliminary Treatment.—It is essential that the patients should have a preliminary period of rest in bed, not only for purposes of local cleansing, but because congestion is diminished in those who have struggled to be about. The prolapsed bowel should be returned and if possible retained which still further diminishes local congestion.

Description of the Operation.—During the operation the elevated lithotomy position is employed in order to diminish the tendency to protrusion of the rectum.

An incision is made around the dilated anal orifice anteriorly and laterally for three-quarters of its circumference. A mesial incision is then made from the anal orifice to the fourchette which, when deepened, splits the perineal body. This incision is prolonged at its anterior extremity outwards and forwards into each labium (Fig. 1). The anal sphincter and the lower end of the rectum are exposed by dissecting away the superjacent tissues, and the posterior vaginal wall is dissected upwards for about 2 inches (Fig. 2).

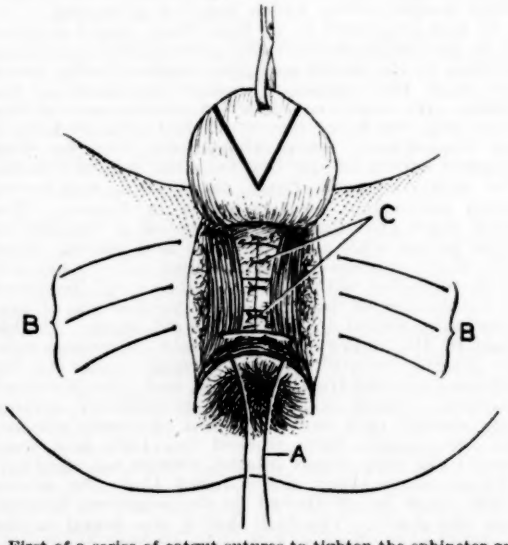
FIG. 2.



C, Vaginal flap. A, A, Levatores ani. B, Sphincter ani.

Catgut sutures are now introduced grasping the sphincter ani, being passed on one side from within outwards under the sphincter muscle and avoiding the mucosa, and in the reverse order on the opposite side and are then tied. A sufficient number of these sutures are introduced to restore the anal orifice to the normal size, and when a good grip of the sphincter muscle is taken by the sutures this muscle is strengthened and tightened and a normal anal aperture is constructed. Sutures of catgut are further used to tighten the stretched or torn fascia over the lower end of the rectum and to reinforce any weak spots. A number of silkworm-gut sutures are next inserted, passing inwards

FIG. 3.



A, First of a series of catgut sutures to tighten the sphincter ani and to restore the anal orifice to a normal size. B, Silkworm-gut sutures. C, Fascial sutures. The V-shaped piece to be excised from the vaginal flap is indicated.

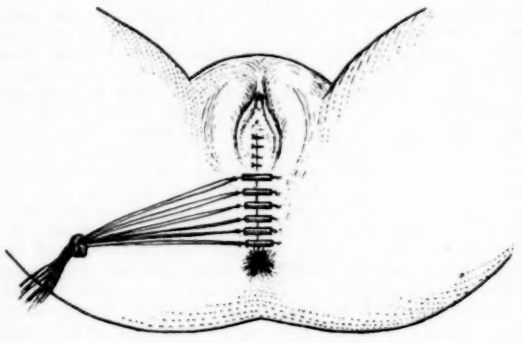
through the skin and levator ani muscle on one side and outwards through muscle and skin on the opposite side. The levatores ani muscles are then united by catgut sutures (Fig. 3). A V-shaped piece is excised from the posterior vaginal wall and the edges united by catgut sutures which when passed also take a grip of the levatores ani muscles in order to bring these muscles and the posterior vaginal wall into close apposition. The skin edges are next united with interrupted catgut sutures and the silkworm-gut sutures tied through small pieces of india-rubber tubing, thus completing the operation (Fig. 4).

The last or most posterior silkworm-gut suture is passed so as to prevent the anal orifice falling backwards, which is not infrequent after operations for complete rupture of the perineum. Catgut may also be employed for this suture.

A "sacral anus" is a complication which should not be encountered where the necessary precautions have been taken during the operation to restore the anal canal. After this operation I believe it is best to refrain from administering purgatives, at least for some days in order that healing may remain undisturbed. Should the patient be uncomfortable in consequence of the bowel not acting, warm olive oil should be run into the rectum through a small india-rubber tube and a dose of castor oil given by mouth. The bowels should afterwards be kept acting by a gentle laxative.

Although this type of operation remedies the anatomical defects which seem to accompany this

FIG. 4.



Operation completed.

variety of prolapse, yet congenital predisposition is an ætiological factor which cannot be overlooked, for two of my patients were sisters, and I was informed that another sister and two cousins suffer from rectal prolapse. Exercises to cause contraction of the levatores ani muscles and sphincter ani should therefore be practised after this operation, and such exercises are still more necessary in the presence of congenital muscular weakness. Finally, this operation offers a prospect of cure, not merely to the surgical derelicts cast adrift because of the failure of other methods, but to those who bear their suffering not knowing that anything can be done for their relief, as well as to those who from knowledge of failures have lost faith in modern surgery.

MANCHESTER PATHOLOGICAL SOCIETY.—At the the annual meeting, held on May 9th, the retiring President, Mr. F. H. Westmacott, vacated the chair, which was taken by Dr. T. A. Goodfellow, President for the forthcoming session. Prof. J. S. Dunkerly gave a demonstration of Venomous and Non-venomous Snakes. Mr. F. H. Westmacott showed specimens and photographs from a case of chronic hypertrophic pulmonary osteo-arthropathy, and Mr. R. D. Mothersole showed a specimen of a congenital buccal cyst about the size of an orange. Prof. Shaw Dunn showed specimens of ulcers of the œsophagus, amongst them two examples of decubitus ulcers of the pharynx, caused by the pressure of the cricoid cartilage against the vertebral column, and Dr. C. Powell White demonstrated a number of microphotographs, illustrating the histology of tumours.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

COMBINED MEETING OF SECTIONS OF DERMATOLOGY AND SURGERY.

A JOINT meeting of these Sections was held on May 16th to discuss the

TREATMENT OF VARICOSE ULCERS BY INJECTION OF SCLEROSING SOLUTIONS.

Dr. J. M. H. MACLEOD, President of the Section of Dermatology, who took the chair, pointed out that the method was not really new, as 50 years ago a deliberate effort had been made to cure varicose ulcers by injecting perchloride of iron and other substances. They had been given up, however, chiefly because of the danger of causing embolism and severe necrosis, some fatal sequelæ having been recorded. Prof. J. A. Sicard, of Paris, and Prof. G. Nobl, of Vienna, and others had now, however, evolved a treatment which was brilliantly successful with only a minimum of risk and had the great advantage of not interfering with the avocation of the patient.

Prof. SICARD, who spoke also on behalf of his colleagues, Dr. J. Forestier and Dr. L. Gaugier, pointed out that varicose ulceration developed on tissue which had become predisposed thereto by a number of factors. General factors included varix, hereditary predisposition, age, endocrine derangement, and syphilis. The result was a weakening of the vein walls and valves, and also of the supporting perivascular tissues. Mechanical factors might also be operative—e.g., intrapelvic pressure; also much standing, with phlebitis, trauma, or local infections. As regards to treatment, Prof. Sicard submitted the following classification. With post-phlebitic ulcers occurring on an œdematous leg, rest, massage, and support were the reasonable methods of attack. For dirty, serpiginous ulcers of long standing, showing a good deal of local dystrophy, the treatment should consist of rest, disinfection, vaccines, light, and surgery. For ulcers with only a moderate degree of local disturbance—a kind which usually followed a limited dermatitis—local cleansing, as by spirit, should precede sclerosing injections. In cases of mixed syphilitic and varicose ulcerations, antisyphilitic remedies, in association with local obliterative injections, were indicated. Prof. Sicard employed a solution of sodium salicylate, in water, of a strength ranging between 20 and 60 per cent. Both the strength of the solution and the frequency of the injections were determined by the actual condition present. The injection was made into all the veins immediately proximal to the ulcerated area, a dose being 2 or 3 c.cm. Sodium salicylate was preferred, but other substances had been used with the same object, such as quinine, sodium citrate, glucose, and hypertonic saline. When, in early cases, eczema was a prominent feature, that also was improved by the method. He had had no experience of untoward incidents, though a very large number of injections had been made, and he regarded the method as highly efficient.

Mr. T. TWISTINGTON HIGGINS said that Prof. Sicard had first drawn his attention to the method, and that increasing use of it had impressed him increasingly with its value. In the series of cases on which his contribution was based the following solutions had been employed: (1) sodium salicylate, of 20, 30, or 40 per cent. strength; (2) quinine and urethane; and (3) 50 per cent. glucose. The first two of these he had found very satisfactory, but glucose had been disappointing. In an analysis of 200 completed cases it was found that 35 had active ulceration at the time of treatment. Sclerosing injections had been strikingly helpful in promoting the healing of many ulcers, though in some this effect was less

obvious. All his cases of ulcer were also treated with Unna's dressing, ointment, &c. In every varicose ulcer, trophic, traumatic, and infective factors played a part. Some people seemed susceptible to degenerative changes in veins and skin, and when these appeared they were progressive. In the production of an ulcer some trauma could usually be found; it might even be caused by irritation by clothing, or scratching an area of irritation. And when once the skin was eroded, infection easily supervened. The type of ulcer which these injections seemed especially to benefit was that in which the trophic element still preponderated; the common situation for these was over the inner aspect of the lower third of the tibia. Some had gone on for years, in spite of ordinary treatment, but readily yielded to the injections. The case was very different, however, with the infected ulcer; there must be a preliminary cleaning up of the site, with rest in bed, and he delayed injection until surgical cleanliness had been secured. A dirty ulcer might be presumed to carry the possibility of an embolus. Despite the size of the area involved in some of these cases, the injection treatment was of considerable value, though naturally results were less immediate than in uncomplicated cases. He was especially interested in the prevention of these conditions, and injection in his view was most useful in the pre-ulcerative stages, when the danger of ulceration could often be averted. At present only a small section of the numerous patients with varicosity submitted themselves for treatment at an early stage; many tried to carry on with the aid of elastic supports, and came only when ulceration was definitely established. Embolism he regarded as a negligible risk in this treatment. It had not occurred in his own 1232 injections. He always tried to satisfy himself that there was no local or distal focus of sepsis in the patient for here, if anywhere, lay the danger of embolism. He advised his patients to avoid vigorous exercise during the treatment and for three weeks thereafter. There must always be some risk of periphlebitis and local necrosis. His series included 23 cases of periphlebitis, 12 of them going on to necrosis. The risk of this was chiefly in old patients. The general toxic symptoms when they arose he considered unimportant. In one young unmarried woman injection of quinine had caused vicarious menstruation. Following the due reaction, the affected segment of vein was obliterated as a venous channel, hence there could be no recurrence in it. Failure might result either from under-dosage or from too protracted treatment. The worst cases needed many injections, but with care and patience obliteration could almost always be promised.

Sir SIDNEY ALEXANDER, who had used the method since 1925, expressed his preference for salicylate of soda, up to 40 per cent. in distilled water. When quinine was used, patients sometimes complained of pain two or three days after the injection. After injections of sodium salicylate they would sometimes declare they felt better even before leaving the room. It was very important to make sure that the solution got into the vein, and he preferred to make the injection with the patient in the horizontal posture.

Mr. DAVID LEVI summarised the results of 300 cases treated by the method. Five of his patients had had thrombosis at sites other than those injected, three patients had not reacted at all, and in one of them a 66 per cent. solution of glucose, a 25 per cent. solution of salicylate, and lastly, quinine and urethane had all proved unsuccessful. The use of glucose seemed to be followed by more complications than did the other substances.

Dr. W. N. GOLDSMITH alluded to the interference with cutaneous nutrition seen in these cases, with stretching, leading to dermatitis, which was a frequent precursor of varicose ulceration. In all varicose conditions prolonged rest in bed should not be enjoined unless it was accompanied by massage and gymnastic movements; otherwise the patient would not be able to deal with the forces with which he would have to meet on getting up. In only one case had Dr. Goldsmith failed to obliterate veins. Before injection it was necessary to ascertain whether the blood was flowing more rapidly upwards or downwards when the patient was in the upright posture. The only contra-indication to the treatment was a history of phlebitis. Only one injection should be done at a time.

Mr. R. T. PAYNE spoke of 30 cases of venous ulceration which he had treated by this method. Almost all the cases showed healing. He used quinine and urethane, and none of his patients had complained of having tasted the quinine afterwards. In one case vicarious menstruation had ensued. Periphlebitis and local necrosis could be prevented by applying direct local pressure to the site for two minutes after the injection, followed by bandaging.

Dr. H. BECKETT-OVERY said he had given over 500 of these injections, and his experience led him to favour sodium salicylate. He inserted the needle with the patient in the erect posture, and then carried out the injection slowly with the patient reclining.

Dr. ST. G. B. D. GRAY entered into the mechanism of clotting, and said he generally found that a venous ulcer had a feeding vein coming in at the top. The results from sodium salicylate were admittedly excellent, but pain was complained of. He now used quinine and urethane, and had patients in the standing posture for injection.

Dr. FORESTIER summed up the discussion and replied to questions which had been raised. He emphasised the importance of attention being paid to early œdema of the skin. Two types of varicose ulcers existed, one being very amenable to this method, while in the other the effects were not so evident. The most suitable were the ulcers with a moderate dystrophy. The dirty, serpiginous ulcers must be cleansed before attempting injection. The more often cases of early varicosity were treated by injection, the fewer cases would there be of serious, infected serpiginous ulcer. He and his co-workers saw no advantage in the use of the tourniquet in the treatment. It had not yet been settled whether the clot due to the injection of sodium salicylate was of the same kind as that resulting from glucose injections. Quinine caused more symptoms than did sodium salicylate. With regard to any danger of embolism, Prof. Sicard and his colleagues had now made over 300,000 injections of sodium salicylate, and 25,000 of quinine, without one case of pulmonary embolism. Every patient, however, was given a routine preliminary clinical examination, in respect of abnormalities in the blood pressure, urine, and heart, which probably contributed largely to the good results.

On the motion of Mr. V. WARREN LOW (President of the Surgical Section) the openers were cordially thanked for their contributions.

ROYAL MEDICO-PSYCHOLOGICAL ASSOCIATION.

THE NEW PSYCHIATRY.

AT a meeting of this Association on May 16th, with Dr. J. HAMILTON MARR, the President, in the chair, Sir JOHN MACPHERSON delivered the Maudsley lecture on the New Psychiatry and the influences forming it.

Psychiatry, he said, was indissolubly linked with the medical and biological sciences and participated in their solidarity and also in their unrest. In addition it underwent vicissitudes peculiar to itself. When Pinel and Tuke had rescued the insane from barbarous ill-usage they had liberated human thought from crude and primitive conceptions of insanity. As a result immense advances had been made in the anatomy, physiology, and pathology of the brain. The advent of psychopathology marked the beginning of the twentieth century and had come unannounced. Janet had demonstrated that hysteria was a mental disorder and could be interpreted in

psychological terms. His contribution to psychiatry was the concept of dissociation, which was the basis of the new psychiatry. In some respects his definition was not now satisfactory, for it implied a splitting-up of consciousness and of personality, and since the cortical mechanism integrated as a single system it was highly improbable that either could be split. Bernard Hart had helpfully described dissociation as an "out of gear" relationship, and had pointed out that much of the misunderstanding about it had arisen from conceiving it as containing a spatial element. As a working hypothesis this was applicable to the whole field of mental and nervous phenomena. Hughlings Jackson 50 years ago had described a similar condition, teaching that all morbid nervous phenomena were due to a negative factor—loss of function at a higher level—and a positive factor—over-function at a lower level. The causes of dissociation resolved themselves into two coöperating groups, the causa causans and the causa sine qua non. To the latter we could at present only refer as inherent instability of the central nervous system. The modern return to the study of diathesis, temperament, and constitution might throw light on the subject. It was on the cause of dissociation that Freud joined issue with orthodox psychiatry, maintaining that it was the conflict of opposing psychological forces and that the resulting symptoms were due to an attempt on the part of the organism to adapt itself to altered conditions. Upon this statement he had built a system of psychology which was more firmly established than some people believed, for it was unassailable by direct argument or dialectic attack. Doubt could not be cast on the observed facts, for they were known only to the individual psycho-analyst, and criticism of the concepts was met by the legitimate answer that they were not phenomenal facts, but conceptual formulæ similar to the law of gravity and the atomic theory. The most serious feature in functional nervous and mental disorders was the tendency to relapse. Unless the Freudian method could check this tendency—and there was evidence that it did not do so in all cases—it had no advantages over other methods. The Freudian hypothesis was embarrassing to psychiatry, but was not supplanting it. Psycho-analysis might be described as an *imperium in imperio*. The field of psychiatry was infinitely wider than that covered by the Freudian doctrines, and one of its most important departments was the investigation of the physical basis of mental disorder. To say that the brain was a living organ was only to say that it was the material and visible symbol of life. The more elaborate a nervous system, the more perfect were its psychical reactions. It was capable of adjusting the individual to most of the ordinary situations of human experience, and operated both in time and space.

The Foundations of an Objective Psychology.

Recent investigations had opened up the possibility that mental processes could be approached objectively on the physical plane. The psycho-motor, psycho-sensory, and psycho-inhibitory functions of the cortex were co-extensive and coöperative in the initiation and coördination of formulated expression and purposive action. Disorder of purposive action or apraxia resulted from definite organic lesions which separated the psycho-motor function from the psycho-sensory and either from the motor area. Apraxia might be motor; ideomotor, as in perseveration; or ideational. The causative lesions were numerous, and enough were on record to justify the localisation of pure motor apraxia in the left frontal lobe and front of the corpus callosum and of ideomotor and ideational apraxia in the supramarginal and angular gyri and the association area of the temporal lobe. Marie and Head had revolutionised earlier conceptions of aphasia. Marie admitted no distinction between motor and sensory aphasia, and denied the existence of visual, auditory, or kinæsthetic word-image centres and of storage of word-images in the cortex. He recognised only one centre, diffusely localised in the tempero-parietal region, which is specialised for language, and insisted that aphasia was intellectual defect involving general intelligence. Aphasia and agraphia had become symptom complexes produced by the dissociation of definite systems of mental processes, termed by Head symbolic thinking and expression. Temporary or functional forms of apraxia and aphasia had been described by von Monakov, and resulted from a loss of cerebral equilibrium. The cortex functioned by means of vital energy, which kept its various positive and negative activities in uniform equilibrium like the motion of a humming top. This vital neural energy was common to all nervous function, and Head had suggested for it the name "vigilance." Any agency which lowered it disturbed cortical equilibrium and produced dissociation until a new equilibrium gradually became established. Pavlov's remarkable experiments on dogs had demonstrated the existence of cortical inhibition in actual operation. The cortex might be visualised as a mosaic of inhibitory and excitatory areas within which the dynamic activities of irradiation and induction constantly acted and reacted in endless variety. Certain changes in the cortical equilibrium of the dog might result in natural sleep, in a kind of hypnosis, or in acute mental perturbation. Pavlov's experiments had intimated that cortical inhibition and sleep were one and the same process. Excitable and inhibitable types of dogs stood at either end of a temperament- and character-series, and they tended respectively to develop symptoms corresponding to the maniacal and melancholic phases of the manic-depressive syndrome. In predisposed dogs mental disturbances developed as a result either of an unusually acute clashing of excitatory and inhibitory processes or the influence of strong and extraordinary stimuli. The hypnotic symptoms were closely allied to hysteria, and the pathological mental perturbations to phases of circular insanity. Hysteria was a functional form of apraxia in which amnesia, however unobtrusive, was always present. The symptoms were never absolute; sensation was present, though unrealised, in the anæsthetic limb, and contractures relaxed during sleep. These paradoxical phenomena pointed to inhibition of function in the psycho-sensory and psycho-motor centres, with automatic functioning of the corresponding receptor and effector centres of the cortical projection system. As far as it was permissible to compare dogs with men, Pavlov's work indicated that the finely balanced equilibrium of the mosaic of cortical inhibitions and excitations with their dynamic interplay of irradiation and induction was replaced, in the manic-depressive syndrome, by coarser, badly differentiated areas of inhibition or larger, badly inhibited areas of excitation. These researches showed the lines along which mental science was advancing towards the solution of the problem of dissociation. They had broken down the artificial distinction between physiological and psychical processes and reactions and laid the foundation of an objective psychology.

The State and Psychiatry.

The intervention of the State in the care of the insane had been made essential by abuses, but had had certain disadvantages for psychiatry in that it had detailed a much too limited number of medical men for administrative duties and had created an artificial class of certified persons. The prejudice against lunatics and lunacy administration might be discerned in the legislature, the law courts, and the press, and the fundamental error underlying it was that the certified insane alone were mentally disordered. Yet there was no single symptom in the whole range of mental disorders that was not represented in the mental processes of normal men and women, who were only saved from insanity because their more or less efficient cortical mechanisms were able to correct mental refractions and inhibit tendencies to abnormal behaviour. Abnormal behaviour determined the need of certification. The certifying authority ought to be able to go beneath behaviour to the nature and cause of the cortical dissociation, and therefore the statutory appointment of a layman to revise medical opinion

could only be regarded as a device to allay public suspicion. The Lunacy Act of 1890 showed less care for the welfare of the insane than for the protection of the sane. Beyond doubt existing suspicions in the public mind were aggravated rather than allayed by the trend of modern legislation. In countries where there was absence of suggestive "safeguarding enactments" there was little public suspicion.

Napoleon had said: "In the long run the sword will always be conquered by the spirit." The scientific spirit behind psychiatry could not be defined in Acts of Parliament. It tended to evade legal restraints and break through official legislation, sometimes in undesirable directions. The obvious way of guiding it into channels which best subserved the well-being of patients, the growth of scientific knowledge, and the trend of healthy public sentiment was the admission of all cases of mental disorder to public hospitals without certification or judicial intervention. These people should remain under observation and treatment until they recovered or until a liberal period of observation had shown that there was no prospect of early recovery. There was plenty of legal machinery for dealing with the small recalcitrant minority. In conclusion Sir John Macpherson looked forward to the time when methods of physical science would have discovered means for the removal of cortical dissociation more permanent in their results and less dangerous to life than nature's rougher methods, exemplified in the malarial treatment of general paralysis.

A vote of thanks to the lecturer was proposed by Dr. J. G. SOUTAR and seconded by Dr. W. F. MENZIES.

Reviews and Notices of Books.

PHYSICS IN MEDICAL RADIOLOGY.

By SIDNEY RUSS, D.Sc., F.Inst.P., Joel Professor of Physics, Middlesex Hospital; L. H. CLARK, Ph.D., F.Inst.P., Research Assistant, Physics Department of the Hospital; B. D. H. WATTERS, M.Sc., A.Inst.P., Demonstrator to the Department. London: Chapman and Hall, Ltd. 1928. Pp. xii. + 234. 12*s*. 6*d*.

THIS is an excellent book, admirably arranged, which fills a gap in British radiological literature. Of the 17 chapters, the first three deal with electrostatics and current electricity, with electrical conductivity in gases, and with electromagnetic waves. Then follow chapters on cathode and X rays, on the production and properties of X rays, the measurement of X ray intensity, and the wave-lengths of X rays. The phenomena of radio-activity, of radio-active emanations and active deposits, and of dosage in radium therapy form the subject matter of Chapters VIII. to X, while a very interesting section on photography, light, and X rays closes the first part of the book. The remaining chapters (XII. to XVII.) deal with the phenomena of electro-magnetism and with the apparatus used in medical work which depends for its working—primarily at any rate—upon Faraday's discovery. Among such apparatus we may mention motors, high-tension generators, and high-frequency and diathermy currents. There are two valuable appendices, of which the first contains the revised recommendations of the X Ray and Radium Protection Committee (1927); while the second, by Prof. Russ and Mrs. R. H. Somerset, deals with a hospital radium service. Inasmuch as the radon distribution centre of the Medical Research Council is housed at the Middlesex Hospital, and is under the charge of Prof. Russ, it is plain that we have here first-hand information, embodying great experience which will be read with profit by all who are concerned in the use of radium and radon in hospitals and similar institutions.

The authors have succeeded in focusing the main physical facts of special importance in radiological work within small compass. The book makes no claim to be a general text-book of physics, but is an epitome of a particularly specialised branch. A modest preface includes a suggestion of regret that, though mathematics are so distasteful to many doctors, the authors have been unable to refrain from introducing mathematical argument into the text where this has seemed essential. No apology is needed: for radiology without physics is about as scientific as surgery without anatomy, and some acquaintance with mathematics is essential to even an elementary knowledge of physics. Those medical men who propose making a special study of radiology must revise their mathematics, if their use of apparatus is to be intelligent, and if they hope to undertake any useful research in the course of their practice. Prof. Russ himself has been one of the pioneer workers in this country upon the combined physical and biological actions of radiation, and can therefore speak with authority upon the amount of mathematical knowledge, which must precede any attempt to understand even the elementary principles of radiology in its medical applications. One who had had long experience in the teaching and examination of medical students in physics is not likely to set the standard unduly high. Any effort required in grasping the principles set out in the book will be well repaid.

DISEASES OF THE LARYNX.

Third edition. By HAROLD BARWELL, F.R.C.S., President of the Section of Laryngology, Royal Society of Medicine; Consulting Surgeon, Diseases of the Throat and Ear, St. George's Hospital. London: Humphrey Milford, Oxford University Press. 1928. Pp. 278. 12*s*. 6*d*.

IN these days of rapid advances in surgical procedures and technique it is a difficult task to revise a book after a long interval in such a way that it retains the characteristics of its predecessor, and at the same time reflects accurately the changes which have occurred in the interim. Mr. Barwell has succeeded in providing a concise and up-to-date manual for the general physician and surgeon and the student of medicine on diseases of the larynx. The greater part of the book has been re-written. The development of endoscopy has involved not only expansion of the section on examination, but has so advanced our knowledge of pathological conditions of the trachea and bronchi as to necessitate the inclusion of much new matter. An entirely new chapter on diseases of the œsophagus has been added. Under the non-commital heading, Idiopathic Dilatation, is described the condition called, by A. F. Hurst, achalasia of the cardia, and, by Chevalier Jackson, functional hiatal stenosis. The method of self-treatment by a rubber bougie filled with mercury, which was devised by Hurst, is held by Mr. Barwell to be simple, easy, and safe. The chapters on Tuberculosis of the Larynx are outstanding, and bear the stamp of the author's wide experience in this type of case. His discussion of the treatment indicated is lucid and unbiased, despite the fact that he obviously considers that most laryngologists now tend to neglect active local treatment, even in cases where it might prove of benefit. In the section on Malignant Disease he has presented the case for and against operation with impartiality, and has embodied the most recent results obtained by X rays and radium therapy. The practitioner will be grateful for the excellent account of the measures to be adopted in cases of very advanced laryngeal tuberculosis and in those of inoperable malignant disease of the larynx. Such cases are obviously a source of the greatest anxiety to the family doctor, and most treatises fail to assist him in devising palliative treatment. The printing and illustrations are excellent, and despite the addition of new material, the volume has not been enlarged to an unwieldy size.

THE LANCET.

LONDON: SATURDAY, MAY 26, 1928.

GLYCOSURIA AND HEREDITY.

THE presence of dextrose in the urine used to be regarded as pathognomonic of diabetes mellitus, but 30 years ago a case was described in which glycosuria was associated with nephritis, and the amount of sugar in the blood was normal. The next few years saw occasional reports of other cases in which the blood-sugar remained at its usual level while dextrose was being excreted by the kidney, and it was soon realised that nephritis was but rarely associated with this phenomenon, and that, apart from this finding, the patients were perfectly well. The discovery by IVAR BANG that the blood-sugar could be estimated accurately in small samples, and the subsequent introduction of simpler methods, has made possible the careful study of many cases of this kind, and it is now clear that the sugar tolerance is quite normal. The reason why sugar appears in the urine is that the "threshold" of the kidney is not set at the usual level. Whilst a normal kidney does not begin to excrete dextrose until the blood-sugar has risen to 170–180 mg. per cent., the kidneys of these patients will do so at lower levels, the threshold being set at any point from the normal down to 50 mg. or even lower. The condition may be suspected when glycosuria is found unassociated with any of the usual symptoms of diabetes mellitus, and circumstantial evidence can be got by studying the symptoms which occur after a drastic reduction of carbohydrates in the diet or after injecting insulin. A definite diagnosis, however, can only be made after observing the effect of a dose of dextrose on the blood-sugar, tests being made at half-hourly intervals for two hours.

The condition thus discoverable has had various names, such as renal diabetes, diabetes innocens, and negligible glycosuria. In this country it is usually called renal glycosuria, but the name of orthoglycæmic glycosuria suggested by URBAN HJÄRNE in a recent monograph[1] is perhaps a better, because it signifies that the glycosuria occurs although the blood-sugar is normal; furthermore, it does not suggest any disease of the kidney. Almost as soon as the condition was recognised it was noticed that it often affected more than one member of the same family, and it is this aspect of the subject that HJÄRNE has been studying. Being lucky enough to find a family in which it commonly occurs, he has made exhaustive inquiries and observations. Seven generations have been studied, but nothing abnormal was discovered in the history of the first three generations, which comprised ten known persons. In the fourth generation there were 18 members of the family, and one had a glycosuria which did not run the course of a true diabetes mellitus, and was probably orthoglycæmic. In the third generation there had been a marriage between first cousins, and in the fourth generation one of the offspring of this marriage again married a cousin. It is therefore possible to divide members of the next three generations into three groups according to whether they sprang from two, one, or no first-cousin marriages. The group in which there had been no intermarriage consisted of 102 persons, 72 of whom were examined. Of these, ten had either typical orthoglycæmic glycosuria or had had a glycosuria without any symptoms of diabetes mellitus. True diabetes occurred once in the fifth and once in the seventh generation, affording a striking contrast to the other cases. The group which sprang from one marriage between first cousins contained 108 persons, 77 of whom were examined. Fourteen of them had either an orthoglycæmic glycosuria or else a glycosuria without any symptoms. One case of true diabetes developed in the fifth generation and one in the sixth. Lastly, in the third group, which arose from two first-cousin marriages, there were 41 persons, of whom 30 were examined. Of these 2 out of 6 in the fifth, 8 out of 13 in the sixth, and 6 out of 20 in the seventh generation had typical orthoglycæmic glycosuria, as shown by sugar-tolerance tests, and there were no cases of true diabetes mellitus. This careful piece of work shows clearly that intermarriage increases the frequency of this rare abnormality, and after investigating the family records, partly with a view to seeing whether the transmission obeys the dominant or recessive laws of inheritance, HJÄRNE states that "the cases occur entirely in accord with the manner and numbers in which a monofactorial dominant factor is inherited."

For years there has been a difference of opinion in this country between, on the one hand, those who recognised that orthoglycæmic glycosuria was harmless, and did not shorten life, and, on the other, most of the life assurance offices, who took the view that the condition had not been long enough observed for any such conclusion to be drawn. Acting on this opinion they have either refused applicants altogether or loaded the policy against them in various ways. The evidence provided by HJÄRNE confirms the views of previous workers and should go far towards inducing the life assurance offices to alter their attitude towards cases which, on proper investigation, prove to have orthoglycæmic glycosuria.

[1] Urban Hjärne: Acta Medica Scandinavica, 1927, lxvii., 422.

STATUS LYMPHATICUS.

ABOUT 200 deaths are registered each year in this country as due to "status lymphaticus." We owe the idea that there is an association between unexpected deaths from trivial causes and a bodily constitution characterised by a large thymus and a general excess of lymphoid tissue to PALTAUF, who put it forward nearly 40 years ago, and there is still some doubt whether the expression really means anything more than "G.O.K." In an admirable review of the evidence published last year, Prof. M. GREENWOOD and MISS WOODS[1] came to the conclusion that if "status lymphaticus" exists at all its anatomical signs cannot be recognised post mortem and that therefore it cannot be regarded as a satisfactory explanation of some of the deaths which "would in more pious, but not more superstitious, days have been attributed to the visitation of God." The committee appointed by the Pathological Society of Great Britain and Ireland and the Medical Research Council came to much the same conclusion in their

[1] Jour. Hygiene, 1927, xxvi., 305.

preliminary report.[2] Abroad there has been much discussion and the majority of observers are at least sceptical about the reality of the condition or at any rate about its frequency. It is, therefore, useful to read a survey of the subject by Dr. DAVID MARINE,[3] who takes a different view.

It is generally admitted that a large thymus and big lymphatic glands are found very often in children whose death requires no more explanation than obvious violence, and that infections and malnutrition lead to an extraordinarily rapid wasting of the thymus and lymphoid apparatus; what is commonly regarded as anatomical status lymphaticus is the normal condition of the healthy child and the patients who die of broncho-pneumonia or enteritis after a few days' illness, and from whom most of our experience is derived, have a grossly atrophied lymphoid system. If the children who are run over by motor-cars or killed in fires show the anatomical signs of status lymphaticus, it seems hardly reasonable to look on the same signs as a satisfactory "cause of death" in those who shock the anæsthetist by dying after a whiff of chloroform or who succumb to some experience no more violent than a bath. Dr. MARINE, however, argues that there is more substance in "status lymphaticus" than these facts suggest. Starting with the observations that a large thymus is found pretty regularly in fatal Graves's disease and in a certain number of cases of Addison's disease, and that excision of the adrenals in animals lead to an increase in the size of the thymus, he suggests that there is a group of persons where a primary deficiency or imbalance of the endocrine apparatus leads to lymphoid hyperplasia and a lowered resistance to various stimuli and poisons, and that this group have genuine "status lymphaticus." He deprecates the habit of making the size of the thymus the final diagnostic criterion; different parts of the lymphoid apparatus may be involved in different cases. Other anatomical changes have been described—small suprarenals, hypoplastic aorta, delayed genital development, disturbances in calcification, lymphocytosis, and so on. None of them, however, are at all constantly present, and the best that can be made of the data seems to be the suggestion that it *may* be possible to disentangle from the general mass certified as "status lymphaticus" a small group of cases which are really abnormal anatomically. Perhaps the most likely association is with hypoplastic adrenals; adrenalectomy causes what Dr. MARINE boldly calls "experimental status lymphaticus" and a greatly lowered resistance to various toxins and poisons; the involution of the human adrenal cortex which occurs just after birth may be the explanation of the frequency of "status lymphaticus" in young children. But the case which he makes for the reality of the condition is not convincing.

The problem is difficult to solve, for these unexpected deaths are not nearly as common as their notoriety might suggest, and the controls, in the form of healthy children accidentally killed, are not very common. The recent Coroners' Act seems to have had the unfortunate effect of diminishing the number of examples of sudden and violent death which are subjected to expert examination, and emphasis is laid once more on the grave defect in having no central institute in London where all the medico-legal work should be concentrated in the hands of experienced pathologists, who might have some chance of getting to the bottom of this and similar problems.

[2] Jour. Path. Bact., 1925, xxviii., 132.
[3] Arch. Path., 1928, v., 661.

THE BRITISH PHARMACOPŒIA.

THE British Pharmacopœia has had to suffer many criticisms, and some of them have been due to misconceptions of its purpose and function. The Subcommittee of the Committee of Civil Research, whose recommendations are printed in another column, has at least the merit of having made up its collective mind upon these matters. The original statutory explanation of the Pharmacopœia, we know, is that it is a book containing a list of medicines and compounds and the manner of preparing them, together with the true weights and measures by which they are to be prepared and mixed, and containing such other matter and things relating thereto as the General Medical Council shall think fit. So said the Medical Act in 1858, and, after Parliament had declared four years later that the Pharmacopœia of the Council was to supersede the different publications in England, Scotland, and Ireland, the first edition was issued in 1864. Since that date changes have been plentiful. It was sufficient for the early Pharmacopœias to be descriptive lists of medicines compiled by practitioners for use by practitioners. To-day the British Pharmacopœia must, as the Subcommittee observes, provide not only a carefully scrutinised list of current drugs of repute, but also authoritative standards whereby the purity and efficacy of these drugs may be tested. To the dispenser it will be an actual manual of practice; he must dispense according to its standard any medicament contained in its pages which is mentioned in the prescription handed to him. To the physician it is something different; to him it is not a manual of therapeutics to be consulted in daily practice, but a guarantee that, when he prescribes a drug which is mentioned in its pages, he and his patients can be confident that they will obtain an article of the quality and character therein defined. The patients mean the public at large, and the public will be more interested in obtaining the guarantee than in the assessment of responsibility and credit amongst those who collaborate in the compilation.

Parliament in 1858 enacted that the General Medical Council should cause the British Pharmacopœia to be published under the Council's direction and should cause it to be altered, amended, and republished as often as was deemed necessary. It has been an undoubted grievance of many who have laboured in this field that the Council—a body created for more than one purpose—had no ad hoc equipment. To secure a truly authoritative publication it is essential to call the Pharmaceutical Societies into council and to give them the representation which their services deserve. No better method is likely to be suggested than the proposed new Pharmacopœia Commission selected with a reasonable elasticity from persons of proved knowledge and experience by a Selection Committee on which all interests will be duly represented. The machinery for revision of the publication is rightly to be made permanent; periods of alternative activity and inactivity cannot cope with the constant correspondence and collation of material which modern conditions demand. Revision every ten years, following the United States practice, is undoubtedly a sound proposal; the suggestion of periodical supplements between the successive editions may be difficult to realise, but the idea of local supplements to be issued officially in India and the other Dominions overseas is probably the only practical method of meeting a known Imperial difficulty. If India and the Dominions can see their way to coöperate in the work, they

can ensure the consideration of their special interests. The finance of the scheme is to have a trial run with a fund of its own. There is apparently a hope that the General Medical Council will find the proposition self-supporting.

The Subcommittee, in its report and recommendations, raises many other issues, but it may be sufficient for the present to say that it has discharged the first duty of such a body by achieving unanimity and by putting forward proposals in a clear and reasonable form.

Annotations.

"Ne quid nimis."

THE PRESIDENCY OF THE GENERAL MEDICAL COUNCIL.

Sir Donald MacAlister was appointed 24 years ago President of the General Medical Council. He was at the time a tried member of the Council, having in 1889 succeeded Sir George Humphry as Representative of the University of Cambridge, but there were many members of the Council senior to him, so that it was significant of the impression which he had made upon his colleagues that his nomination as their head gave immediate satisfaction to them all. On Tuesday afternoon last, at the opening of the present session of the Council, Sir Donald MacAlister attempted to resign this long-held trust, and testified in doing so, to the full measure of continuous support which throughout his extended tenure of office he had received from his colleagues. For the medical profession we can say that the Council have throughout been well advised in refusing to allow Sir Donald MacAlister to retire from the leadership of their deliberations. From the inception of his Presidency to its close, he has displayed the qualities which all recognise as essential for leadership. He has devoted an intellect of unusual force and clearness to his far-reaching duties, not sparing himself, yet never unwilling to delegate responsibility or to leave in the hands of others the preliminary and detailed work necessary, if special questions were to be presented in comprehensible form to the general body of the Council. The dignity of his office has been safe in his hands, while he has never lost sight of the fact that the General Medical Council was created by Act of Parliament in the public interest. Medicine and the public already owe Sir Donald MacAlister an unpayable debt, and the news that he has consented to give another term of arduous service is welcome.

FURTHER OBSERVATIONS ON ANÆMIA.

THE papers on anæmia which we publish this week may be regarded as supplementary to those on liver treatment appearing in our issue of April 28th. In reviewing the remarkable results of this remedy in pernicious anæmia, we then pointed out that the work of Whipple and Robscheit-Robbins which led to its adoption was carried out on dogs suffering from experimental secondary anæmia. The natural inference is that liver should have a beneficial effect in human secondary anæmia, though its action in the "primary" variety is evidently much greater, and this inference seems to be justified by the work of Dr. Janet Vaughan at University College Hospital. Two of her cases showed a small but definite increase of reticulocytes, though in others there was no response of this kind. The fact that she could record no benefit in lymphatic leukæmia is not very surprising in view of the wide divergence of the origin of lymphoid cells and red cells, but this negative result should not deter clinicians from trying the remedy in leukæmias of myeloid type. Dr. Vincent Coates and Dr. J. L. Delicati, of the Royal Mineral Water Hospital, Bath, have studied its effect in arthritis of varying severity and record in most cases a rise in the red cell count during the short period of treatment. Dr. S. C. Dyke and Dr. Joan Greener, working at the Wolverhampton and Staffordshire Hospital, have prepared graphs showing that the reticulocyte crisis at the beginning of liver treatment synchronises with a rapid drop of the serum bilirubin to normal. This drop of the serum bilirubin, on the face of it, seems to point to a cessation of hæmolysis, and these observers offer an explanation of the coincidence of the two phenomena based upon the recent American work of Peabody. Conclusive proof is, however, lacking that the increase of the serum bilirubin, almost invariably present in pernicious anæmia, is due to hæmolysis; this is the obvious explanation, but it is possible that the increase is really due to failure on the part of the hæmatopoietic system to make use of the precursors of hæmoglobin. This requires further investigation. Dr. O. L. V. de Wesselow and Dr. Joseph Bamforth, of St. Thomas's Hospital, have been able to confirm the fact that in pernicious as opposed to secondary anæmia the plasma volume is normal and that no variation occurs in the course of treatment by liver. Lastly, we may draw attention to the brief paper by Dr. F. C. Eve, of Hull, who has been studying pernicious anæmia with the technique devised by Dr. Adrianus Pijper, of Pretoria, described in our columns [1] some years ago. Dr. Eve reports a decrease in the size of the red cells after liver feeding in cases of subacute combined sclerosis of the cord. He lays stress upon the importance of this mode of investigation in the diagnosis of pernicious anæmia; but the fact that he was able to demonstrate an increase in the size of the red cells in a child of 2, and also in a patient with leukæmia, suggests that the method should not at present be relied on to the exclusion of other means of diagnosis.

SUNLIGHT AND HEALTH.

A SUPPLEMENT to the issue of the *Times* of Tuesday, May 22nd, forms a valuable summary of our knowledge of the part which sunlight plays in the maintenance and promotion of health in far-reaching directions, and of its direct therapeutic value when artificially applied. The whole of this large reference is well covered in 40 fully illustrated pages; the general lessons in their application alike to natural and artificial sunlight are delivered by recognised authorities, and their value is indicated by careful editorial comment; while the contributions along special lines form a fair and full story of what applied science has been able to effect in many conditions which have hitherto defied our therapeutics. Essays by Mr. T. A. Webster on ergosterol, by Dr. Leonard Hill on the measurement of ultra-violet radiation, and by Prof. Sidney Russ on the electro-magnetic theory of life, will be valuable to medical readers, as they afford the scientific evidence which is relied upon when sunlight therapy, a comparatively new weapon in the practitioners' hands, is employed in particular treatments; the general benefits of balneological methods are exposed in articles by Dr. Fortescue Fox, writing on the British climate and British spas, and by many correspondents from France, Germany, Spain, Italy, Switzerland, Algeria, and Egypt, describing what centres in those countries can offer, special praise being due here to the descriptions by Dr. Kurt Huldschinsky of open-air culture and the practice of actinotherapy in Germany. A large part of the supplement is occupied with descriptions of th influence of access to the sun in improving general environment, and though the teaching may be obvious it is none the less valuable, especially if the information is absorbed by public authorities concerned with the building of schools, the provision of playing-fields, and the organisation of institutional life. The *Times* has done public and timely service in issuing this supplement.

[1] THE LANCET, 1924, ii., 367.

EPHEDRINE IN LEPROSY.

E. Muir and S. P. Chatterji have shown that the nerve pains which form such a distressing feature of advanced leprosy were relieved by the injection of 3–5 minims of 1/1000 adrenalin chloride solution. The benefit resulting from adrenalin suggested that ephedrine, which has the advantage of oral administration, might have the same effect, and in the *Indian Medical Gazette* for April Dr. Muir and his colleague are able to give a satisfactory report of its action. These nerve pains are believed to be caused by the presence of leprosy bacilli in the nerve trunks. In the quiescent stages a proliferation of the connective tissue cells takes place; when febrile reaction takes place the lepra cells are broken up naturally, or as the result of treatment a sudden engorgement of granular tissue occurs, and pressure on the axis cylinders is exerted. Were it not for these nerve reactions leprosy would be a comparatively painless disease, so that a drug which relieves the condition is to be welcomed. Ephedrine sulphate given in hard gelatine capsules in a single dose of 0·05 to 0·1 g. was in most cases sufficient to cause relief in 45 to 60 minutes and its action was maintained for 24 hours, or even longer. Nerve reactions may occur in the course of treatment with iodides, each dose causing pain which lasts from one to three days. If ephedrine is taken whenever the pain commences, the patient is able to continue treatment in comfort until the granulomatous condition is cleared up. The immediate action of ephedrine is attributed to contraction of the arterioles of the nerve trunks and relief of vascular engorgement. It is not yet clear exactly why it fails to relieve a minority of patients. A sequel of its use may be vertigo, and a small preliminary dose is advisable for this reason. Ephedrine has the advantage over opium preparations that the relief of pain is less transient and the effect on the general condition of the patient is beneficial.

ACUTE SYPHILITIC PHLEBITIS.

ACCORDING to Dr. Howard Morrow and Dr. N. N. Epstein,[1] who report a case seen by them in the syphilis clinic of the University of California, phlebitis is one of the unusual manifestations of syphilis, the veins, in striking contrast with the arteries, appearing to enjoy comparative immunity to this disease. Including the first reported cases, described in our own columns[2] by G. P. Girdwood, the writers have collected 45 observations of various forms of syphilitic phlebitis which they have classified into the three groups of early superficial phlebitis, nodular thrombophlebitis, and late phlebitis. Early syphilitic phlebitis, to which they confine their attention, appears as an inflammatory process involving the whole of a superficial vein, several segments of a vein, or a single segment. It has a tendency to be multiple, involving the veins of more than one limb and often progressing from one vein to another. The lower limbs are most frequently attacked, the internal saphenous usually being selected. The phlebitis develops within a few months of the chancre and may accompany or even precede the early secondary rash. As a rule the local and general symptoms are so slight that the condition is readily overlooked, or they may be severe, including nocturnal pains and constitutional disturbance. The skin over the affected area is usually reddened and occasionally there is slight œdema. The limb may be swollen, but does not pit on pressure. Early syphilitic phlebitis has a remarkable tendency to recur either in the original vein or in another in the same or opposite limb. Under specific treatment complete resolution occurs in two or three weeks. Complications are rare, and only one case of embolism has been recorded. The condition is much commoner in the male than in the female, for of 31 cases in which the sex is recorded 27 were in males and only four in females. Strain and alcoholism are supposed to be contributory factors. The chief pathological change is a proliferation of the connective tissue in the subendothelial layer which causes protrusion of the endothelium into the lumen of the vein. The *Spirochæta pallida* has been found in the lesions. According to Morrow and Epstein early syphilitic phlebitis is distinguished from the phlebitis due to other infectious processes by the lack of constitutional and local symptoms, the multiplicity of veins involved, the tendency to recurrence, the rarity of embolism, and the prompt response to specific treatment. In their own case the patient was an alcoholic blacksmith, aged 30, who developed phlebitis in the fourth month of syphilitic infection, the right calf being subsequently involved. Much improvement took place under arsphenamine, but the condition recurred when he resumed work, and a second but milder recurrence developed later. Recovery was eventually complete.

[1] Archives of Dermatology and Syphilology, March, 1928.
[2] THE LANCET, 1860, i., 619.

DISCOVERY OF ANOPHELINE BREEDING-PLACES.

IN a malarial area detection of the breeding-places of anopheline vectors may prove difficult, so that pointers to these spots are always welcome. Local variation in splenomegaly was, for example, used with significant effect by the late Dr. S. T. Darling[1] in a Brazilian village five years ago. On a large scale map he marked the homes of all children with enlarged spleens; incidence was far highest near the river on which the village lay, and mosquito larvæ were sought for and found in pools in the low land between village and river. Can a similar use be made of the impression among field workers that male anopheles do not stray so far as females from the water from which they emerged? Is it the case that, in collections of anopheles made from shelters during the day, the percentage of males to females is greater the nearer that shelter lies to the water where they passed their early life? Barber, Komp, and Hayne[2] investigated this matter three years ago. They found that, in over 34,000 specimens of *Anopheles quadrimaculatus* examined, the percentage of males to females was least among those caught in shelters accessible to a source of blood and greatest where no such source was convenient. This is, of course, a distribution such as would occur were males evenly distributed and females congregated close to the sources of the blood meals which they alone enjoy. The actual percentages of males found by these workers were: in animal houses inhabited at night, 6·7; in dwellings, 11·2; in chicken-houses, 17·8; in privies and under dwellings, about 30; in other shelters, 46. It may be that the somewhat greater percentage of females found in animal houses than in dwellings indicates a preference of these female anopheles for animal as against human blood. At all events the investigation leant no weight to the belief that the percentage of males in any shelter had a relationship to its distance from breeding-places. Swellengrebel,[3] investigating this point in the environs of Amsterdam, found that, among some 25,000 *A. maculipennis*, the percentage of males was highest in human habitations and, with the curious and perhaps fortuitous exception of places housing calves, lowest in uninhabited barns and lofts. It has, however, to be added that these last cannot have been far from food sources since 29 per cent. of females caught in them contained blood. More recently Swellengrebel, in collaboration with Rook,[4] has reinvestigated the matter, under the auspices of the Rockefeller Foundation, by the examination on this occasion of over 200,000 *A. maculipennis*. At Medemblik, where the work was done, antilarval measures protect a wide area. At its centre, 3000 metres from breeding-places, males constituted 8 per cent. of captures; at 1600 metres from breeding-places, 16 per cent.; and right among them, 20 per cent. Over these very large numbers, then, a certain relationship can be found between the percentage of

[1] Jour. Amer. Med. Assoc., March 17th, 1923, p. 740.
[2] Pub. Health Rep., U.S. Pub. Health Service, 1925, xl., 105.
[3] Bull. Soc. Path. Exot., 1927, xx., 121.
[4] Rivista di Malariologia, 1928, vii., 7.

males captured and the distance of the shelter from breeding-grounds. Unfortunately the influence of other factors is so much greater than that of distance that this percentage, whether for *A. maculipennis* or *A. quadrimaculatus*, cannot, with the relatively small collections usually possible, be used as a signpost to lead the hygienist in the field to the breeding-places of these mosquitoes. Whether this negative conclusion is of more general application only wider investigation can show.

ANTISCARLATINAL SERUM AND RELAPSE.

IN an analysis of relapses occurring at Ilford Isolation Hospital after an attack of scarlet fever (see p. 1060), Dr. A. H. G. Burton and Dr. A. R. Balmain come to the conclusion that these are more frequent in cases treated by antiscarlatinal serum. In 432 such cases they have found the relapse rate to be 4·16 per cent., which is high compared with the generally accepted rate of from 1 to 2 per cent. It is not easy to arrive at an accurate relapse rate of this disease since occasional errors in the original diagnosis arise, and many relapses are mild and sometimes difficult of recognition. However, the 4·16 per cent. of relapses in this series of cases can hardly be in doubt since rise of temperature, a punctate erythema, congested fauces, and a peeling tongue were all present. It would be interesting to know whether the relapses were, as is usual, milder than the primary attack, and what relation the severity of the initial attack had to the relapse. They say that antiscarlatinal serum appears to have the definite effect of increasing the number of Dick-positive reactors during convalescence, and evidence of this is given. This is not surprising since the antitoxin, being supplied artificially, the need for the human mechanism to set up its defence is less. They conclude that cases of scarlet fever admitted to isolation hospitals should be Dick-tested at the end of the third week, and that it is unjustifiable to retain cases of scarlet fever in a general ward who give a marked Dick-positive reaction during convalescence, but that such cases should be isolated or immunised. That these conclusions are reasonable can hardly be doubted, especially when antiscarlatinal serum has been administered and so increased the chance of relapses, as shown by the authors. At the present time scarlet fever, being the mild disease that it generally is, the question arises whether it is desirable to administer antiscarlatinal serum to all cases. There is, however, a tendency towards increased severity to be noticed in certain areas and a few toxic cases have been reported. Doubtless Drs. Burton and Balmain had their special investigation in view when they gave serum to every case on admission; the opinion held by most observers is that serum treatment may be reserved for the more severe attacks.

CARBON MONOXIDE FROM MOTOR EXHAUSTS.

THE rapid increase of motor traffic in all civilised countries has led to so many mishaps that world-wide attention has been given to the question of the presence of carbon monoxide in the air, not only of garages—where the likelihood of its occurrence is by no means as well recognised as it should be—but of the streets themselves. A correspondent in the United States of America recently cited [1] some data collected in 14 large cities by officers of the public health service. Very small, but still determinable, amounts of carbon monoxide have been found in the air of Paris, and the same order of impurity has, we are informed, been found in the air of London streets by the research chemists of one of the London gas companies. The day is probably far distant when the air of our streets is likely to become dangerous fron this cause, even if no measures are taken to reduce the risk, but a recent occurrence in one of the tunnels under the Thames has given prominence to the very different atmospheric conditions existing in these sub-aqueous highways now and at the time when they were constructed. The responsible authority appears to be fully alive to the necessity for coping with the problem, not an easy one, of ventilating these tunnels. Everyone will agree that their ventilation should be adapted to modern conditions, but there seems no reason why an attempt should not be made to reduce the amount of carbon monoxide entering the air. This could be done without any public regulation if motorists would make a rule of stopping their engines whenever their cars are brought to a standstill in a confined space. This would seldom mean any real delay as an engine which must of necessity have been running for some time would hardly cool so rapidly as to give difficulty in starting. Motorists as a class are inclined to take risks in this respect which no chemist or medical man would lightly incur. As regards the general question of carbon monoxide in the air of streets, it is consoling to note that MM. Cambier and Marcy discovered no sensible increase in the carbon monoxide content of the air of Paris over the amounts found by A. Gautier in 1877, except when samples were taken at the level of and near the exhaust of a car, or during a traffic block in a one-way street. At the junction of the Place de l'Opéra and rue Auber, as much as 13 parts of CO per 100,000 were found when the number of vehicles passing was 2600 per hour; in rue Mogador, a narrow one-way street, five parts were present during a traffic block. But these amounts represent conditions which are quite transitory.

[1] THE LANCET, April 28th, p. 881.

ANATOMICAL NOMENCLATURE.

AFTER an interval of some years Dr. Cuthbert Morton has renewed his campaign on the present condition of terminology in anatomy. His letter appeared in THE LANCET of May 12th. Concerning the general questions involved in this matter, we see no reason to alter the opinions which we published in 1920, when Dr. Morton had contributed a paper on the subject to our pages. We may say, however, with reference to the item in the agenda of the Anatomical Society to which he refers in his last letter, that we are informed that it was merely a private motion brought by a member at an ordinary meeting, in which he sought for some expression of opinion from his colleagues, and that even then its discussion was, after argument, postponed to a future occasion. Under these circumstances we cannot, of course, say more about it, but it is evident that the facts do not in any way warrant the direful assumptions and forebodings which darken the greater part of Dr. Morton's letter. No one can help feeling sympathy with Dr. Morton in his sorrowful contemplation of the scene of chaos, but, on the other hand, we have a suspicion that the confusion is not so confounding as is often alleged, and that the cry of urgency is perhaps a little overdone. In any case the terminology fated to survive must evolve itself from the materials at hand, and the introduction of another system or set of "principles," although it may add to the material, will certainly not lessen the confusion. Anatomists are as much concerned as anyone with this question, but they seem to be aware of the fact that an international nomenclature is really an impossible ideal. Moreover, as we have pointed out already, their views embrace a wider field than that in which medicine is interested or concerned, and for this reason we would not anticipate much useful result from a conference between them and their clinical brethren. We are in cordial agreement with Dr. Morton's plea for wider use of the English tongue, and we fancy that the competent teachers of anatomy employ their native language much more than might be imagined from a study of many text-books. We must also, like everybody else, admit that the adoption of sound principles of nomenclature would afford a solid foundation for building upon; but as each individual would have his own views on what might be a sound principle, and what could not be so

considered, we fear that the result of an effort to make such a foundation would be far from a success. One is almost tempted to think that the best service to the cause would be rendered by leaving it alone to work out its own salvation by the natural processes of fitness and survival, and to refrain from adding to the number of subjects of dispute.

SERUM TREATMENT OF DIPHTHERIA.

IN an interesting paper on the Control of Diphtheria in Institutions read before the Naval, Military, and Air Force Hygiene Group of the Society of Medical Officers of Health on May 3rd, Surgeon-Commander S. F. Dudley said that to withhold antitoxin until the bacteriological report came was criminal, and that the diphtheria throat swab had been in many ways a curse. These are emphatic statements which it would be well for the profession to ponder over, for there is no doubt that many of the deaths caused by diphtheria are due to the medical attendant awaiting the result of a bacteriological report. Within the past few years attention has repeatedly been drawn to the dangers attending this practice, and there was an annotation in THE LANCET of May 28th, 1921, emphasising this. In the 1928 edition of Goodall and Washbourn's "Infectious Diseases" Dr. E.W. Goodall writes as follows:—

> "Now the writer desires to lay down most emphatically the rule that every endeavour should be made to arrive at a diagnosis before recourse is had to the swab and the culture tube. Many a life has been lost because the medical attendant has waited for the result of a culture or accepted a first finding, negative as regards diphtheria bacilli, as conclusive that the disease was not diphtheria."

Since the annotation referred to was written there has been in London, taking it as a whole, for it appears less evident in certain areas, a slowly growing tendency not to wait for a bacteriological report, and this should receive every encouragement from medical officers of health. Nevertheless it is still regrettably common for diphtheria patients to arrive at the hospitals of the Metropolitan Asylums Board without antitoxin treatment, whose admission has been delayed by the result of the bacteriological examination. It should ever be present in the mind of the medical man how rapidly the danger to life augments in diphtheria if treatment is delayed. It is well to recall MacCombie's figures of some 7000 cases which were adequately treated with antitoxin on admission to hospital. The death-rate of those treated on the first day of the disease was 0·5 per cent.; on the second day, 4 per cent.; on the third day, 10 per cent.; on the fourth day, 15 per cent.; and on the fifth and succeeding days, 16 per cent. Diphtheria is by no means always easy of diagnosis, and it may be difficult to decide upon the attitude to adopt, but if there is doubt the case should be regarded as diphtheria and dealt with as such. Particularly is this so if the condition of the throat shows signs of severity, and it should be a golden rule not to postpone treatment by antitoxin in any acute throat condition which might be diphtheria unless one feels assured that the sufferer will certainly recover. The strong and salutary words of Surgeon-Commander Dudley about the swab recall the statement once made by an authority on diphtheria: "Were it not that the diphtheria bacillus had given us antitoxin it would have been well had it never been discovered." Yet it must be remembered that though the swab is in many ways a curse, because it is so frequently misused, it is nevertheless a valuable addition to diagnosis if used in the proper way to confirm diagnosis, made or suspected by the clinician, after treatment has already commenced.

The fear that unpleasant reactions will follow injection of serum may sometimes influence the decision, and therefore deserves a moment's consideration. To the various accidents which result from the use of antitoxin the term anaphylaxis is sometimes applied, but it is doubtful whether anaphylactic shock ever occurs in man, and in the words of the Medical Research Council's report on diphtheria published in 1923, "serious accidents after inoculation or reinoculation with antitoxins are so rare that no physician ought ever to be driven by the fear of them to withhold antitoxin in any case of diphtheria." This report pointed out that both shock and serum sickness tend to be somewhat more frequent when the individual has had one or more previous injections, and when the antitoxin is given intravenously. When serum is injected into the body an interval of some 12 to 14 days elapses before the subject is rendered supersensitive. How long his supersensitive condition remains is unknown, and sometimes, of course, it does not develop at all. A good rule, however, is that if the patient has previously—more than ten days before—had an injection of serum an attempt at desensitisation should be made. The method usually adopted is as follows: hypodermic injection of 0·5 to 1·0 c.cm. of the therapeutic serum is given, followed by the full curative dose after an interval of five or six hours. Where the practitioner thinks it dangerous to delay for so long he may adopt an alternative method by which a dose of 0·5 to 1·0 c.cm. of the serum is followed ten minutes later by a slightly larger dose, and gradually increasing quantities are given at intervals of about five minutes, until the appropriate amount has been injected. In practice it is found that shock is extremely rare whether the person has previously had serum or not.

THE LUNACY LAW OF NEW SOUTH WALES.

THE annual report of the Inspector-General of Mental Hospitals for New South Wales opens this year with an urgent plea for amendment of the State legislation. The changes in the treatment of the mentally sick during the last 30 years have been so far-reaching and rapid that any Act dated 1898 must be gravely behind the times. Indeed, this particular one was regarded as out-of-date in 1902, and ever since then the matter has been repeatedly brought to the notice of the Minister, but so far without effect. There is, however, a draft Bill before the Assembly and this, if it becomes law, will provide for persons suffering from mental disease in accordance with the degree of restraint they require. Thus it will be possible to treat patients in the early amenable stages before they need certification. The classification of patients into three groups compares with, although it is not identical with, the grouping recommended by our recent Royal Commission. Those who are amenable to treatment without requiring detention are to be dealt with in ordinary hospitals or special wards. Those whose own interests demand their detention will be kept in special hospitals, while the older mental institutions will continue to receive those who require compulsory detention for their own protection or for that of the public. The property of the first two classes would not be controlled except at the patients' own request, and they would be free to give seven days' notice of their desire to leave the hospital. Laggard as this country may be in some matters respecting mental health legislation, we have a Mental Defectives Act and can well understand that the lack of one in New South Wales creates a serious situation. A Bill was prepared some time ago and planned to put under the Education Department defectives of school age and those likely to benefit by instruction, while the older and hopeless cases would be dealt with by the Inspector-General of Mental Hospitals. Other reforms urged in the report as overdue are the establishment of a colony for epileptics and of a committee of psychological experts to examine criminals. In actual practice, however, as Sir John Macpherson pointed out in his Maudsley lecture (p. 1074 of this issue), psychiatry in New South Wales is both advanced and untrammelled. Psychiatric clinics have been established at a number of general hospitals. Medical officers are not appointed permanently until they have secured their diploma

in psychological medicine; a doctor and two nurses are to be sent to America to study occupational therapy, and a system of social service work is under consideration. The Psychiatric Clinic in Sydney, to which Sir John Macpherson was visiting physician, is an example of a modern voluntary hospital which was established without legislative enactment and finds itself happily free from irksome restriction. Voluntary patients are found in all the mental hospitals, but, like our own county asylums, these institutions have no legal right to receive uncertified patients. The new Bill would remedy this anomalous position. The legislature will undoubtedly be making a grave mistake if it does not support its enthusiastic medical staff by the necessary enactments.

HIDEYO NOGUCHI.

WE much regret to learn of the death of Dr. Hideyo Noguchi from yellow fever at Accra on May 21st. Dr. Noguchi went to the West Coast in November of last year to take part in the combined investigation of African yellow fever, in which Prof. Adrian Stokes lost his life last September, and was expecting shortly to return to America. During the last ten years Dr. Noguchi has worked extensively on the disease in Central and South America where his researches culminated in the discovery of a spirochæte to which he attached ætiological importance, which he was able to grow on a large scale in artificial culture and by means of which it was hoped to prepare an efficient vaccine or serum to supplement the sanitary measures which have nearly eradicated the disease in the Americas. The objects of the West African inquiry were to find out whether the disease there was really the same as in Central America (answered already, we believe, in the affirmative), whether it was transmitted by a specific mosquito in the same way, and whether its source was some reservoir of animals from which human infections were derived. The early work of the West African Commission entirely failed to find any signs of a spirochæte and proved as definitely as may be that the disease could be transmitted by an invisible virus by the agency of mosquitoes. It was doubtless a desire to clear up this discrepancy which took Dr. Noguchi to Africa with such unhappy results. His exceptional skill and experience with spirochætes and other parasites will be greatly missed by those who are trying to clear up what remains of the yellow fever problem. Dr. Noguchi was born in Japan in 1876 and educated at Tokyo University. He first went to the United States in 1901 as assistant lecturer on pathology to the University of Pennsylvania. In 1903 he became research assistant at the Carnegie Institute and later joined the staff of the Rockefeller Institute, of which he has become one of the most distinguished members. He will always be remembered for his pioneer work on the cultivation of spirochætes outside the body, for the discovery of the *Spirochæta pallida* in the brain in general paralysis, and in the spinal cord in tabes, and for his researches on yellow fever and on the small-pox virus; the successive volumes of the *Journal of Experimental Medicine* are good enough testimony to his fertile brain and clever hands.

It may be as impossible as it was in the case of Prof. Stokes to find out exactly how Dr. Noguchi took the infection. Possibly it is unwise for any but the young and robust to embark on such inquiries; we recall the deplorable loss of A. W. Bacot from typhus and, on the other hand, remember that Walter Myers died of yellow fever at Para when he was in the 'twenties. The native animals in West Africa have proved entirely refractory to the infection; the discovery that macaque monkeys from India were very susceptible gave the Commission an invaluable method of investigation without which any substantial progress would have been impossible. But it may be that the provision of such a suitable soil has enhanced the virulence of the parasite and made experimental work particularly dangerous—a problem which Dr. Noguchi would have delighted to attack. This second tragedy within a year makes plain the dreadful nature of yellow fever and the fact that even experienced workers are unable to organise investigations in endemic areas without grave risk.

MYOPIA IN JEWISH CHILDREN.

IN a paper entitled Race, Sex, and Environment in the Development of Myopia,[1] Dr. A. Sourasky advances statistical arguments to show that there is no connexion between the development of myopia in children and the time they spend in reading, even reading in an unfavourable hygienic environment; but rather that there is something in the Jewish race which is peculiarly favourable to the development of myopia, and that among children, both Jewish and non-Jewish, the boys are considerably more liable to be affected than the girls. The numbers on which his conclusions are based are not very large—1649 Jewish children and 600 non-Jewish, all in East London—and Dr. Sourasky does not maintain that his thesis is finally proved; but it is not easy, however, to find a flaw in his argument. It appears that the Jewish boys (not the girls) of East London, in addition to attending the ordinary elementary day school, also have classes for the study of Hebrew, lasting 2½–3 hours, on four evenings every week, the lighting and other conditions under which these classes are held being often very bad. The conclusion that suggests itself at first is that the excess of myopia among Jews, and the excess in Jewish boys over Jewish girls, has to do with an excessive amount of study in a bad light. When, however, the ages at which defective vision is found among the Jewish and the non-Jewish children is compared, it is found that the heavy incidence of defect among the Jewish boys is apparent at the very beginning of school life, at the age of 6, and is hardly less then than towards the end of school life. Excessive reading, therefore, so it is argued, cannot have anything to do with the short sight. As far as we know, it has never been suggested that there are peculiar conditions affecting Jewish infants prejudicially more than non-Jewish, which might account for the excess of myopia at the age of 6; this is a point which deserves attention. Dr. Sourasky's figures, however, as far as they go, do illustrate the facts that there are a considerable number of cases of myopia which date from an age prior to the commencement of school life, that their development is largely independent of environment, and that they are especially prevalent in the Jewish race. At the same time the gradual increase of myopia during school life is a well-attested fact, and there is considerable evidence to show that close application to books is one, at any rate, of the factors causing it. In matters of school hygiene to act on any other assumption would be, at present, to say the least of it, premature. In the meantime we hope that others will collect series of cases, for whereas Dr. Sourasky's figures, both for Jews and non-Jews, show a higher proportion of myopes in boys than in girls, collected figures are extant in which no such difference appears.

THE ROYAL SOCIETY'S CONVERSAZIONE.

OF the two conversazioni given annually by the Royal Society at Burlington House, the first was held on the evening of May 17th. Though not, perhaps, so generally attractive as on former occasions, it included many exhibits of medical interest. Dr. R. J. Ludford showed some mice whose ears, tails, noses, and skin had become definitely blue after an injection of trypan blue, and it was demonstrated that while all the normal cells had taken up the pigment, little or none could be found in implanted neoplasms. Any interpretation of this phenomenon must, of course, take into account the fact that the new growths were not spontaneous, but purely experimental. The Pharmaceutical Society showed a

[1] British Journal of Ophthalmology, April, 1928.

collection of mediæval materia medica, including peacock excrement, adder, sharks' and wolves' teeth, millipedes, and mummy. In the absence of modern biological standardisation dishonest traders were apt to substitute recently embalmed bodies for the more mature article. Much attention was attracted by an exhibit, in which Dr. David Keilin, F.R.S., showed that all bacteria, save the anaerobes, yield a pigment which in iron content, chemical structure, and absorption bands, has analogies with hæmoglobin, and which takes part in the respiratory exchange of the organisms. Another effective demonstration, by the British Mosquito Control Institute, Hayling Island, was one in which mosquito larvæ and pupæ were seen dancing in shadow-play on a screen. An exhibit from Kew Gardens of the plant sources of chaulmoogra oil, and an account of their distribution, which is almost entirely confined to the Indian Empire and neighbouring British territories, was a reminder to the profession of the useful work which Kew is doing in their interest. The almost incredible parasitic infection of Scotland's stranded whales, whose guts were nearly blocked with bolbosoma; the excellent preparations of chromosomes in wheat-pollen, demonstrating the aberrations in chromosome content which lead to mutations, and many other exhibits touched upon our professional activities. The exhibition, in fact, gave good grounds for the conceit that the medical career fits a man, better than almost any other, to take an intelligent interest in the multiple activities of science.

THE Sanitary Committee of the City Corporation have recommended the appointment of Dr. W. M. Willoughby, now medical officer of health for the Port of London, as medical officer of health of the City of London.

THE next social evening of the Royal Society of Medicine will be held on Monday, June 4th, at 1, Wimpole-street, W. Sir James Berry (the President) and Lady Berry will receive the guests at 8.30 P.M., and at 9.15 Mr. C. Leonard Woolley will give an illustrated address on Recent Excavations at Ur of the Chaldees.

THE second annual Macalister Lecture of the London Clinical Society will be delivered at the London Temperance Hospital on Thursday, June 7th, at 8.45 P.M., by Sir Berkeley Moynihan, President of the Royal College of Surgeons of England. His subject will be Medicine in Art. The lecture will be open without ticket to members of the medical profession and their friends, but the hon. secretary, Mr. Winsbury White, 51, Harley-street, W. 1, will be glad to receive notice from those who hope to be present.

DONATIONS AND BEQUESTS.—The late Sir William Forwood, of Bromborough Hall, Cheshire, left among other bequests £1200 to the Hospital for Women, Liverpool; £1000 to the Liverpool University; and £250 each to the Royal Infirmary, Liverpool, the David Lewis Northern Hospital, the Royal Liverpool Southern Hospital, and the Stanley Hospital, Liverpool.—The Glasgow Royal Maternity Hospital has received £40,000 for endowment purposes from Mr. A. Walker, of Newart Castle.—Mr. F. B. Sharp, of Cupar, Fife, and his sister, Miss Christina Sharp, have given annuity bonds for £14,000 and £6020 respectively for the further endowment of the new maternity hospital in connexion with the Dundee Royal Infirmary.—Sir Otto Best has given £10,000 towards the £40,000 for which the British Red Cross Society are appealing to establish in London a clinic for the treatment of rheumatic diseases. This gift with other gifts received brings the total amount raised to date to £33,700.—Lord Howard de Walden has given £10,000 to the Mother-Saving Campaign instituted by Queen Charlotte's Hospital, London.—Mr. and Mrs. Richard Dearden Ward, of Sapling Grove, Halifax, on the occasion of the sixtieth anniversary of their wedding, gave £1000 to the Halifax Royal Infirmary.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CCLXXVII.

THE TREATMENT OF BRONCHIECTASIS.

FROM the point of view of treatment, bronchiectasis may be classified into two main types: (1) obstructive; (2) non-obstructive.

Obstructive Bronchiectasis.

The causes of obstructive bronchiectasis are foreign body, pressure by tumour or aneurysm, cicatrisation, a malignant or innocent growth in the bronchus. Of these foreign body and an innocent tumour are alone amenable to treatment. Bronchoscopy must be employed whenever there is the slightest possibility of the bronchiectasis being due to obstruction. Evidence of this may be obtained from the history of the case or the employment of lipiodol injections. If either of the above conditions is found it must be dealt with surgically. Even after successful removal, treatment on the lines about to be described for non-obstructive bronchiectasis will probably prove necessary.

Non-obstructive Bronchiectasis.

Preventive Measures.—A common cause of bronchiectasis appears to be the after-effects of unresolved broncho-pneumonia. It is, therefore, essential to treat this disease adequately. Long convalescence at the seaside, or some warm dry place in the country, with much rest and later on bathing and sun baths, is indicated. If this regime does not bring about complete resolution diathermy treatment should be tried. A course of vaccines may help. If all these measures fail, a temporary collapse of the affected lung by artificial pneumothorax should be considered, the patient being placed under the healthiest possible conditions of living during the treatment. Sanatoriums for chronic non-tuberculous diseases of the lung are needed.

The Recognition and Management of Established Cases.

Bronchiectatic dilatation may exist with slight symptoms and equivocal physical signs that are in no way pathognomonic. There may be no more than cough, some expectoration and occasional streaks of blood. It is only by the injection of lipiodol and subsequent radiography that the diagnosis in such cases can be made. The general principles of treatment have next to be considered. The essential underlying cause of all types of bronchiectasis, whatever hypothesis may be held of the mechanism of dilatation, is an inflammatory process in the walls of the bronchi. Our first aim is to overcome this inflammation; our second is to close the cavities if necessary and if possible, or to prevent their extension. The following are the methods that may be adopted:—

General Hygienic Treatment.—Prolonged climatic treatment is essential in a warm seaside or country place. Fresh air is important and also rest, especially while the temperature is raised. As in the preventive treatment, bathing and sunbaths may be allowed after a few weeks. If no sun is available ultra-violet rays may be employed. Care must be taken of the teeth, throat, nose, and its accessory sinuses, any focus of infection therein must be removed. The diet must be full and well balanced.

Diathermy applied to the affected part is well worth trying.

Postural Treatment.—Two or three times a day the patient must lie with the head and shoulders lower

than the rest of the body, the pus will then flow into the larger bronchi, excite a cough reflex and so aid in emptying the dilatations. In some cases it is well to let the patient lie for some time with the foot of the bed well raised. This treatment must be carried out thoroughly and conscientiously.

Creosote Chamber.—This is an excellent measure if the patient is not too ill or debilitated. By provoking cough the creosote helps to expel the pus. It also tends to render the breath less offensive. Frequently a crude creosote chamber can be improvised in an outhouse in the patient's garden.

Vaccine Treatment.—I am doubtful of the value of vaccine treatment in definite bronchiectasis. I have seen some alarming reactions and am a little afraid of vaccines in this condition. If they are tried it must be with great caution, starting with small doses and increasing them very gradually.

Medicinal Treatment.—(*a*) *Inhalation:* A few drops of the following solution—carbolic, chloroform, creosote, 2 parts, iodine and ether, 1 part, placed in a Yeo's inhaler and inhaled for increasing periods of time render the breath less offensive and may have an antiseptic action. (*b*) *Drugs by mouth:* Creosote in capsules may be given by mouth in increasing doses up to minims 20 or 30 three times a day. Guaiacol carbonate, ipecacuanha, oil of sandalwood, turpentine, garlic, or arsenic may be tried. (*c*) *Intratracheal injections:* Many substances have been injected into the trachea, such as preparations of menthol or menthol and guaiacol in oil. More recently gomenolised oil, 1 to 5 per cent., and lipiodol have been used in this way, but their value is uncertain. In many patients it is a very easy matter to inject 5 to 20 c.cm. of lipiodol into the lung by the oral method. The patient sits on a chair with the tongue protruded and held while the oil is slowly injected over the back of the tongue, the patient being encouraged to breathe deeply and to relax. In a tolerant subject the whole of the injection will flow at once into the right or left lower lobe as desired without the least difficulty. No cocainisation is necessary. Other oily preparations can be injected in the same way. In my opinion a further trial of these methods should be made.

Collapse Methods.—If the above methods fail some form of collapse therapy will be indicated. The simplest of these is artificial pneumothorax. If this is successful and produces the desired result the problem will usually arise how to make the collapse permanent. In certain cases, especially in children, it seems that a temporary collapse will cause a great improvement and appear to arrest the progress of the condition. Several such results have been reported from different parts of the world and I have observed the same thing in my own clinic. This was before the days of lipiodol, however, and it is a matter of common knowledge that to differentiate between a simple fibrosis and slight bronchiectasis is impossible without the use of lipiodol. Nevertheless, it is not difficult to understand how a temporary collapse may tend to cure even in definite early bronchiectasis, for the bronchi will be relieved of strain and stresses while the subacute inflammatory process subsides. As a rule, however, a temporary collapse will be insufficient. A life-long pneumothorax is impracticable even if it were possible, and unfortunately in bronchiectatic dilatations the walls of the cavities will not adhere as they do in tuberculosis after compression. There are two possibilities: (*a*) converting the pneumothorax into an oleothorax; (*b*) collapse operations.

By *oleothorax* is meant oil in the pleural cavity. The oil that has been most commonly employed is olive oil containing 5 per cent. of gomenol. This will remain unabsorbed for at least six months and refills are therefore needed only at long intervals. The oil remains sweet and apparently unaltered. The discomfort to the patient is surprisingly small. One of my patients, with his left pleural cavity completely filled with oil, has been doing full work for over two years and he complains of no discomfort.

Collapse Operations.—If the disease is basal and the methods described above have not proved successful *phrenic evulsion* should be first considered. It is a simple procedure, has been performed probably thousands of times, and there have been few complications. If it does not cure the disease no harm has been done, as it is an excellent preliminary to procedures about to be described. If the disease is not basal but definitely localised in some other part of the lung, *pneumolysis* is the operation of choice. It involves little or no shock and no mutilation. Performed as it may be from an axillary approach, no visible scar results. The objection to this otherwise ideal procedure is that no really satisfactory packing substance is known. Paraffin and fat are most commonly employed, but both are apt to be extruded little by little through a pin-hole sinus. If this fails, or if the disease is widespread, *thoracoplasty* must be considered. This, however, is a big and a mutilating operation and demands very careful consideration before it is embarked upon. Nevertheless, in suitable cases and performed skilfully, the operation gives the patient what is probably, at the present time, the greatest chance of complete and permanent recovery. The collapse to be successful must be very thorough. It may be necessary after the complete paravertebral operation to resect ribs anteriorly as well. Amyloid disease, a toxæmic or degenerative condition of the myocardium, pyæmic abscesses in other parts must be carefully excluded, before such operative procedures are advised. *Rib mobilisation* used to be performed before thoracoplasty achieved its present popularity, and I can recall one case particularly where a striking cure was obtained by this method.

Removal of the Diseased Area.—Attempts have been made to remove the affected lobe by simple lobectomy or cautery lobectomy. This method is still in a tentative and experimental stage; theoretically it is an ideal process for the purpose, and when the technique improves and the operation becomes safer it will probably be employed extensively.

Drainage of a Large Bronchiectatic Cavity.—When the symptoms appear to be due chiefly to a very large single cavity, drainage may be attempted. This may relieve some of the most distressing features, diminishing very considerably the amount of pus expectorated. For this operation it is essential for the two layers of the pleura to be firmly adherent, as in drainage of a pulmonary abscess. A rib is resected, the ribs above and below are retracted, and the parietal pleura is carefully exposed, any injury to it being avoided. If not adherent the parietal layer of the pleura can usually be seen moving upon the visceral layer, or it can be lifted up with blunt forceps. If it is found free, the external surface of the parietal pleura is painted with iodine and packed with iodine or iodoform gauze, and the wound is lightly stitched up. After four to seven days the two layers of pleura will be found adherent. The lung may then be incised and the cavity drained.

Advanced Bilateral Disease.—If the disease is well established on both sides, none of the collapse methods will avail. All that can be done is to employ the other measures outlined above. If one side has advanced disease and the other side is but slightly affected, it will be a matter of judgment whether it is better to employ some form of collapse therapy on the worse side in the hope of arresting the further extension of the disease. Prolonged medical and climatic treatment must in any case follow. In bilateral disease, however, operative procedures must not be undertaken lightly.

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Special Articles.

THE BRITISH PHARMACOPŒIA.

REPORT OF SUBCOMMITTEE.

THE existing law as to the preparation and publication of the British Pharmacopœia is confined to a single section of the Medical Act of 1858 and two sections of the Medical Act of 1862. The effect of this legislation is to impose upon the General Medical Council the duty of causing a British Pharmacopœia to be published under their direction, and of causing it to be altered, amended, and republished as often as they think proper.

In July, 1926, a subcommittee of the Committee of Civil Research was appointed with the object of ascertaining whether it is desirable to make any alteration in the law or practice relating to the preparation of the British Pharmacopœia and to its adaptation to the requirements of the British Empire.

The personnel of the subcommittee was as follows: Mr. H. P. Macmillan, K.C. (chairman), Lord Dawson, Sir Donald MacAlister, Dr. H. H. Dale, F.R.S., Mr. Edmund White, F.I.C., Dr. H. G. Dain, and Mr. A. F. Hemming. Their report has now been issued. It consists of an introductory section describing the procedure adopted, an historical survey of the pharmacopœia in this country, before and after the Medical Acts, and an account of the financial arrangements governing its production. Criticisms of the present system are dealt with and the proposals of the subcommittee set out. The adaptation of the British Pharmacopœia to the requirements of the British Empire are then discussed, and the report ends with the following summary of the principal conclusions and recommendations arrived at:—

1. That it is not necessary or desirable to make any alterations in the existing law relating to the preparation or publication of the British Pharmacopœia, but that the practice in the matter be altered in conformity with the recommendations which follow.

2. That the General Medical Council set up forthwith a Selection Committee to be charged with the duty of selecting persons to form a new body to be designated "The Pharmacopœia Commission."

3. That the composition and functions of the Selection Committee be as follows:—

(*a*) The Selection Committee should consist of four persons nominated by the General Medical Council, three persons nominated jointly by the Council of the Pharmaceutical Society of Great Britain, the Council of the Pharmaceutical Society of Ireland, and the Council of the Pharmaceutical Society of Northern Ireland, and two persons nominated by the Medical Research Council; the representatives in each case to be chosen by the nominating body either from among or from outside its membership.

(*b*) The Chairman of the Selection Committee should be appointed by the General Medical Council from among their four representatives.

(*c*) The Selection Committee so appointed should select persons representative of the various appropriate departments of knowledge and experience to form the Pharmacopœia Commission.

(*d*) The number of persons selected to form the Pharmacopœia Commission should not be prescribed, but should be left to the discretion of the Selection Committee, who should have power from time to time to select additional persons for permanent or temporary membership, including representatives of India or the Dominions.

(*e*) The Selection Committee should submit to the General Medical Council for approval the name of one of the selected persons to be Chairman of the Commission.

4. That the manner of appointment, composition, and functions of the Pharmacopœia Commission should be as follows:—

(*a*) The Pharmacopœia Commission should be appointed by the General Medical Council, its members being persons whose names are submitted to the Council by the Selection Committee.

(*b*) The Pharmacopœia Commission should be a permanent body with an office and suitable secretariat, and the work of collecting and collating material, preparing reports and conducting correspondence with a view to the preparation of future issues of the Pharmacopœia should be carried on continuously.

(*c*) The actual work of preparing future issues of the British Pharmacopœia should be undertaken by the Pharmacopœia Commission under the general direction of the General Medical Council; on each revision the completed volume should be submitted by the Commission to the General Medical Council for approval; and when approved it should be issued as heretofore with the authority of the General Medical Council.

(*d*) The Pharmacopœia Commission should have power to appoint subcommittees, and to include among the members of such subcommittees experts in any particular branch, whose assistance may be desired, although they may not be members of the Commission.

5. That in future the British Pharmacopœia should—

(*a*) Be revised and reissued at stated intervals of ten years, supplements being issued between the successive editions as required.

(*b*) Contain only standard drugs in general use throughout the Empire.

6. That where it is desired in any part of the Empire to sanction the use of particular local drugs, or alternative preparations not included in the British Pharmacopœia, this should be left to be effected by the Governments concerned by the issue of local supplements or addenda.

7. That the Governments of the Dominions and of India be requested by the General Medical Council, through the appropriate channels, to set up or cause to be set up responsible and representative committees to coöperate with the Pharmacopœia Commission in the revision of the British Pharmacopœia, if they desire and are willing to take part in the work.

8. That at any rate until the results of the publication of the next revision are seen, the funds necessary for carrying on the work of the Pharmacopœia Commission be provided by the General Medical Council, who should receive the proceeds of all sales of the Pharmacopœia, a separate account being kept.

The subcommittee, in presenting these conclusions and recommendations, ask that they shall be considered in the light of the more detailed exposition of their views embodied in the report (Cmd. 3101, 1*s.*) which can be obtained from H.M. Stationery Office. The report is signed by all the members of the subcommittee.

KING EDWARD'S HOSPITAL FUND FOR LONDON.

THE annual meeting of the General Council of King Edward's Hospital Fund for London was held at St. James's Palace on May 15th when the Prince of Wales, who presided, read the following message from the King:—

"The King is glad to hear of the results achieved by the special distribution of the sum of £255,000 received from the estates of the late Mr. and Mrs. John Wells, which has helped the hospitals of London to provide 1600 additional beds and to meet other urgent requirements. His Majesty regards this as a striking proof of what can be done by a Central Fund, when it is in a position to make grants to hospitals which especially need financial assistance, and where the utmost use will be made of the help thus given."

In addressing the meeting the Prince of Wales said that the accounts showed, not for the first time, a better result than was anticipated in November. Since the end of the year the capital had been increased by a very generous donation of £10,000 from Mr. J. J. Crosfield, with a request that it should be invested. When Mr. H. W. Marshall gave £10,000 Conversion Stock last year, in connexion with the thirtieth anniversary, he asked that it should form a separate fund to be called the Marshall Fund, to which members of his family might, if they so desired, add further sums. A bequest by a member of Mr. Marshall's family had since been added to the family fund thus created. The inquiry by the Pay Beds Committee into the question of hospital accommodation for the middle and professional classes was nearly finished, and the report was being prepared. The conclusions, whatever they may be, would be

based on a study of pay beds as they now existed at a number of hospitals in London. The statistical report showed that in 1926 there were nearly 900 pay beds at 73 hospitals. Any suggestions the Pay Beds Committee might make for the future would thus be based on the experiments, if he might so call them, of the past and the present. The final list of grants out of the legacies of the late Mr. and Mrs. John Wells was the end of a most useful piece of work which began in 1924. The last instalment of the two legacies had just been received, and the combined total had come to £255,000. His Royal Highness concluded by referring to the loss to the Fund by the death of Lord Cave, Sir William Church, and Sir John Craggs. In the place of Sir Francis Champneys, who had retired after 17 years' good service, he (the Prince) had appointed Mr. Eardley Holland; Lord Iveagh he had appointed as a member of the Council.

The Finances of 1927.

Lord Revelstoke (the hon. treasurer) then moved the adoption of the accounts for 1927, which was seconded by the Rt. Hon. M. C. Norman, and carried unanimously. The Earl of Donoughmore (chairman of the Management Committee) proposed the adoption of the annual report, and this having been seconded by Sir Berkeley Moynihan (President of the Royal College of Surgeons), was also carried unanimously. The report stated that the total receipts of the King's Fund for the year 1927 were £352,340 18*s.* 9*d.* Of this, £22,000 was from the estate of the late Mrs. John Wells, £1313 0*s.* 8*d.* from the estate of the late Mrs. Florence Mary Hames, £1000 from the estate of the late Mr. Samuel Lewis, £15,004 15*s.* 10*d.* from general legacies, £67,638 4*s.* 3*d.* from gifts to capital (including £60,000 from the estate of the late Earl of Iveagh), and £245,382 0*s.* 5*d.* from general receipts. These general receipts were made up as follows: Annual subscriptions, £23,432 15*s.* 2*d.*; donations, £20,789 16*s.*; League of Mercy, £17,000; British Charities Association, £15,000; dividends and interest from investments, £168,959 9*s.* 3*d.*; and trustees of the Bawden Fund, £200. The amount of the ordinary distribution was £247,000, an increase of £2000 over 1926. The total sum distributed amongst hospitals, convalescent homes, and consumption sanatoriums during the last ten years, including all special distributions, is £3,360,688. Since the foundation of the Fund in 1897 a total net amount of £5,819,104 8*s.* 5*d.* has been distributed.

Grants under the Wells Legacies.

Sir Cooper Perry (chairman of the Distribution Committee) presented the final report on the Wells legacies distribution which contained the following list of grants made from Jan. 1st to May 15th:—

Acton Hospital: £1000 towards revised scheme of extension, increasing the number of beds from 50 to 60; £500 payable when the work is begun, and £500 to be the last £500 required to render the scheme free of debt.

British Hospital for Mothers and Babies: £500 towards second stage of new hospital; making, with £2000 granted in 1927, a total of £2500.

Central London Throat, Nose and Ear Hospital: £750 towards new out-patient department; on condition that a further £5000 is raised and the work begun by July 31st, 1928.

Charing Cross Hospital: £2000 towards reconstruction and equipment of the building acquired from the Royal Westminster Ophthalmic Hospital, increasing the beds by approximately 50; on the understanding that 6 additional beds, making 10 in all, will be reserved for accident cases.

Elizabeth Garrett Anderson Hospital: £500 towards extension; making, with £2000 granted in 1926, a total of £2500.

Forest Hospital: £250 towards extension, increasing the number of beds from 28 to 37; payable when the work is begun.

General Lying-in Hospital: £500 towards rebuilding of adjoining house as nurses' home and antenatal and postnatal departments; making, with £1000 granted in 1927, a total of £1500.

Guy's Hospital: £1000 towards provision of site for out-patient department extension.

Hampstead Hospital: £600 towards new operating theatre and casualty department and provision of 6 accident beds.

Hornsey Central Hospital: £500 towards new nurses' home; payable when the work is begun.

Hospital for Sick Children: £500 towards provision of isolation block for convalescent patients at the country branch at Tadworth, on the understanding that the block will ultimately be used as part of the provision for recovery patients.

King George Hospital: £10,000 towards the building fund of King George Hospital, subject to conditions to be agreed.

Mothers' Hospital of the Salvation Army: £1000 to extension, increasing the number of beds from 90 to 150, payable when the work is begun.

Prince of Wales Hospital: £3000 towards extension of out-patient department; £1500 payable when work is begun, and £1500 to be the last £1500 required to open the extension free of debt.

Princess Louise Kensington Hospital for Children: £500 towards second stage of new hospital; making, with £500 granted towards first stage in 1925, and £1000 towards second stage in 1927, a total of £2000.

Queen Charlotte's Maternity Hospital: £3000 towards first stage of extension scheme, increasing the number of beds; payable when a further £15,000 has been raised and the work begun.

Queen's Hospital for Children: £1000 towards extension, increasing the number of beds from 134 to 155, and providing additional nurses' accommodation; to be the last £1000 required to enable all three parts of the scheme to be opened free of debt.

Royal London Ophthalmic Hospital: £500 towards additional nurses' accommodation; making, with £500 granted in 1926, a total of £1000.

Royal National Orthopædic Hospital: £1500, of which £500 towards acquisition of adjoining site at country branch at Stanmore; and £1000 towards building of additional ward block at Stanmore, increasing the number of beds to 273; payable when the work is begun.

Royal Waterloo Hospital for Children and Women: £250 towards final stage of extension scheme; making, with £3000 granted in 1925, a total of £3250.

St. Mary's Hospital: £1000 towards extension; to be the last £1000 required to render the extension free of debt; making, with £4000 granted in 1926, a total of £5000.

South London Hospital for Women: £500 towards the provision of block containing new out-patient department and nurses' quarters; making, with £2000 granted in 1926, a total of £2500.

Westminster Hospital: £100 towards provision of accident ward, increasing the number of beds in the hospital from 234 to 242, of which 10 will be reserved for accident cases.

Woodford Jubilee Hospital: £300 towards extension, increasing the number of beds from 23 to 31; payable when the work is begun.

Reports were also presented on the work of the Propaganda Subcommittee by Lord Burnham; on the new edition of the Statistical Report by Mr. L. L. Cohen; and on the position of the inquiry by the Pay Beds Committee (to which reference was made in the Prince's opening speech) by the Earl of Donoughmore. During the absence of Lord Hambleden through illness, Sir John Rose Bradford is acting as vice-chairman of this committee.

A vote of thanks to his Royal Highness terminated the proceedings.

MEDICINE AND THE LAW.

Death Certification by Unregistered Doctor.

Charles Forbes, aged 77, pleaded guilty at the Old Bailey on May 18th to a charge of forging and uttering a death certificate. The certificate, as was stated a month earlier at Clerkenwell Police-court, related to one Mary Wagner and purported to be signed by Charles Forbes, M.B., Ch.B., a registered medical practitioner. A second charge in the police-court proceedings alleged that he had knowingly and unlawfully caused to be inserted in the register of deaths kept for the subdistrict of South St. Pancras a false entry relating to Mary Wagner's death. There was evidence that Forbes had been living for about seven years at a private hotel and, posing as a registered medical practitioner (though he had not put up a brass plate), had treated many poor people in the West Central district of London. For the defence it was stated that Forbes had duly qualified as a doctor at Glasgow after being a student at the

Middlesex Hospital, and that he had been struck off the Register about 30 years ago after a conviction for fraud. The Recorder remarked that he was of opinion that Forbes had never been a doctor at all; he was a danger to society. Sir Ernest Wild then passed sentence of nine months imprisonment without hard labour. It seems that the accused, in treating Mary Wagner, who was dying, had been obliged to pose to her nephew as a registered medical practitioner who could sign a death certificate. The unregistered practitioner must sooner or later be exposed to the risk of thus being led into a definitely illegal act, though the general public naturally takes little interest in the certification of qualifications or the fact of registration. As Forbes was not in fact registered, his previous career was not directly in issue; otherwise it would have been interesting to know whether he had in fact ever obtained any qualification.

Escape from Asylum.

For the offence of wilfully permitting, assisting, or conniving at the escape or attempted escape of a patient from an institution for lunatics, Section 323 of the Lunacy Act lays down a rather strangely limited punishment. The offender is to be "liable to a penalty not exceeding £20 nor less than £2." A man who was formerly a mental attendant at a St. Leonards home pleaded guilty at Hastings on May 18th to the charge of having aided and abetted the escape of Prince Ahmed Seif Ed Din, a certified lunatic, from Hastings in August, 1926. He brought his £20 to court and the full penalty was imposed, the chairman of the bench stating that it was a serious offence. The chief constable had observed that the maximum penalty was totally inadequate in a case of such a nature. When, if ever, our lunacy law receives its long-delayed amendment, perhaps Parliament will take note of this official opinion.

THE GERMAN SURGICAL CONGRESS.

(FROM OUR OWN CORRESPONDENT.)

Infective Origin of Malignant Tumours.

AT the recent Surgical Congress the first subject of discussion was the problem of malignant growths. Prof. Heidenhain (Worms) put forward the view that carcinoma, cancer, and sarcoma have the same origin and are conveyed from one person to another by an agent still unknown. The transference of human carcinoma to mice is, he said, impossible, as the human cells are destroyed in the foreign organism by autolysis. He has therefore endeavoured to preserve the virus without the cells and has produced autolysates by keeping cells of human cancer in a thermostat for 20 to 30 days. The products of this autolysis were inoculated into mice by subcutaneous, intracutaneous, intramuscular, or intraperitoneal injections or into the liver; sometimes also fresh tumour pulp was used for injection. The result was that a growth developed after several months. Inoculation of carcinoma often evoked sarcoma, and vice versa, whilst in other cases neoplasms of both categories were produced. The clinical features of the growth in the mice were similar to those of human cancer, and the primary tumour often appeared at a point distant from the place of injection. Metastases also occurred and autolysate made from a metastasis gave the same results on injection as autolysates from the primary growth. More than 2500 mice were inoculated and malignant disease developed in 6 per cent. of them. The success of the inoculation was seldom obvious before six months had elapsed, more often after 6–12 months, and generally after about a year. Primary growths developed in nearly every organ, but never in the skin and only once each in the stomach, the gall-bladder, and the colon. Prof. Heidenhain believes that his experiments have proved that carcinoma and sarcoma are caused by an agent outside the body; it has not yet been possible to ascertain its nature.

Treatment of Traumatic Meningitis.

Prof. Nicolai Guleke (Jena) said that 80 per cent. of cases of fracture of the base of skull prove fatal from meningitis. Nevertheless he recommended that operation should not be attempted unless symptoms of meningitis develop. Lumbar or sub-occipital puncture is indicated when the point of entry of the infection has not been ascertained. The improvement following puncture is due not to removal of the germs, but to reduction of the cerebral pressure. Puncture is not without danger, as it may cause a local meningitis to become general. If puncture proves insufficient, open drainage of the brain, combined with laminectomy of the second or third lumbar vertebra is indicated. The mortality in 325 cases in which operation was performed was only 19 per cent.

Operation for Pulmonary Embolism.

Prof. Gustaf Nyström (Upsala) reported three cases of pulmonary embolism treated by the Trendelenburg operation. One patient lived 30 hours, one five hours, and the third recovered. Prof. Nyström said that as it is sometimes difficult to remove the embolus, he had used an aspiration pump. Dr. A. W. Meyer [1] (Berlin) recommended digital compression instead of the compression tube. Good results were reported by Dr. Fernström (Stockholm), who had had two cures in four operations, and by Dr. Stegemann (Dortmund), who said that a patient operated on four years ago is still in good health.

Avertin.

Dr. Bernhard Martin (Berlin) described his method, using avertin as an anæsthetic. He advises that an enema should be given on the preceding day and an injection of scopolamine and of narcophine one and a half hours before operation. A lukewarm solution of avertin is then administered per rectum half an hour before operation, the dose being 0·125 to 0·5 g. per kg. of body-weight. The method was used for 259 patients, whose ages ranged from 1 to 59 years; the cases included 104 laparotomies and renal operations. The method proved unsuccessful in 4 per cent. of the cases, in which a small quantity of ether had to be given as an adjuvant to secure complete anæsthesia. Prof. Seefisch (Berlin) reported 8 per cent. of failures in 104 cases. He had observed circulatory troubles, the blood pressure sometimes falling 20 mm., but death had never occurred as a result of the anæsthetic. Dr. Keysser (Lichterfelde) drew attention to the excretion of avertin by the kidneys, which makes it desirable in his opinion to administer diuretin.

X Rays in Prostatic Enlargement.

Dr. Bolt (Königsberg) reported 58 cases of prostatic enlargement treated by X rays; 12 of them were in the first, 13 in the second, and 33 in the third stage of the disease. In nearly half of the cases normal function of the bladder was obtained without residuary urine. Twenty-four patients were re-examined after two and a half years, and all of them could pass urine spontaneously. The method, Dr. Bolt says, should always be used in the first stage of the disease, and in the second and third stages the results are no worse than those of operation.

[1] Two cases reported by Dr. Meyer were mentioned by our Berlin correspondent last summer (THE LANCET, 1927, ii., 350). —ED. L.

MILDMAY MISSION HOSPITAL.—The new wing of this hospital in Bethnal Green was opened on Saturday last by Lady Cooper. The extension includes a new operating theatre, X ray, massage, and electrical departments. The number of in-patients has doubled in the last five years and the accommodation has become quite inadequate. Seventy-five doctors and 120 nurses have gone from the hospital to undertake missionary work, and 350 women have been given a measure of practical training to fit them for tending the sick both at home and abroad. The chairman of the council paid a warm tribute to the work of Dr. Henry White, the medical superintendent, and of Miss Woodhouse, the matron.

GENERAL MEDICAL COUNCIL.

THE PRESIDENT'S ADDRESS.

THE summer session of the General Medical Council was opened on May 22nd, Sir DONALD MACALISTER presiding. He had to record the death of one member of the Council since the last session and the retirement from various causes of five others. Dr. J. A. Macdonald, of Taunton, who died on April 23rd, was a Direct Representative, whose energy and skill in practical affairs deserved high praise. This vacancy on the Council would be filled by an election to be held during the summer. Sir Arthur Chance and Dr. J. A. Adams had retired owing to ill-health and their places had been filled by Sir William Taylor and Colonel G. H. Edington, M.D., representing respectively the Royal College of Surgeons in Ireland and the Royal Faculty of Glasgow. Three members, Dr. T. W. Griffith, Dr. D. Hepburn, and Dr. R. Howden, had retired at the expiration of their terms of office and the universities represented by them—Leeds, Wales, and Durham—had appointed Prof. J. K. Jamieson, Prof. A. W. Sheen, and Sir Robert Bolam to take their places on the Council. Of former members of the Council Sir William Church, Sir Dyce Duckworth, and Dr. H. W. Langley Browne had passed away; the President recalled the worthy example they had set to their successors. The President proceeded to refer to the end of his term of office, pointing out that for more than half of its lifetime he had been privileged to take part in the Council's fellowship, and recalling that 24 years ago the Council had entrusted him, then one of its junior members, with the onerous task of upholding the dignity of the President's chair.

The British Pharmacopœia.

The President announced that the privilege of practising in this country afforded to the practitioners of Quebec had been revoked, the reciprocal privilege of practice within its territory hitherto accorded to the registered practitioners of the United Kingdom having been withdrawn. He described the new proposals relating to the issue of the British Pharmacopœia (see p.1086 of this issue of THE LANCET), and expressed agreement with the terms of the unanimous report of the subcommittee. He commended as worthy of adoption the proposals for the readjustment of the practice of the Council in this matter, and recorded with special satisfaction the first conclusion—"that it is not necessary or desirable to make any alterations in the existing law relating to the preparation or publication of the British Pharmacopœia." If that view was accepted, it would rest with the Council, without waiting for legislation, to take immediate action for such alterations in practice as might be found necessary or desirable in view of the current revision of the British Pharmacopœia, 1914. Members of the Council would all be deeply and gratefully sensible of the singular ability and wisdom of the Chairman, Mr. Macmillan, and of the eminent service which through him the Lord President had rendered to the Council and to British pharmacopœial science and practice.

India.

He continued: "By your instructions the important reports on medical education in India furnished by Sir Norman Walker and Colonel Needham, with the conclusions of the Executive Committee thereon, have been communicated to the Secretary of State for India, and through him to the Government of India, and to the Indian universities. We have been officially assured that in the course of this year the question of the central control of standards of medical qualification in India will be dealt with in connexion with the pending inquiry on Indian Government generally; and further, that proposals are now before the Central Legislature for the establishment of an All-India Medical Council, with which this Council will be able to discuss and settle questions of reciprocal recognition of professional qualifications more conveniently and more satisfactorily than is possible in present conditions.

"The University of Calcutta, which has meantime applied for the recognition of its degrees, has brought into early operation its new regulations, revised so as to bring them into better accordance with the statutory requirements for practice in this country, and desired that its final examinations held under the amended regulations should be inspected and reported on by an inspector approved by the Council. The Indian Government, notified of this application, has deputed Lieut.-Colonel J. W. D. Megaw, C.I.E., M.B., I.M.S., to perform this service, in the absence of Colonel Needham on leave. His appointment has been duly approved, and the Executive Committee will probably have to meet in July to receive his report and others relating to India."

Legal Decisions Affecting the Council.

The President referred to two recent decisions, in the Court of Appeal and in the High Court, directly affecting the Council. The first had reference to an application for exemption from income tax payments on dividends received from investments of surplus income by the General Council and its branch councils. The court had decided that, though the Council was concerned by statute with medical education and registration, its functions were not so exclusively "educational" as to make it legally a "charity" within the meaning of the law.

The second decision, obtained at the instance of the Dental Board, disposed finally of the objection sometimes raised to the Council's proceedings in cases of conviction in England or Ireland for "misdemeanour" under Section 29 of the Medical Act, 1858. It had been asserted by counsel for the defence that in that section "misdemeanour" must be read as if the words were "indictable misdemeanour." The objection had, under legal advice, been again and again overruled from the chair. That ruling was now sustained by the judgment of the High Court. The Act for ratifying the Agreement on Medical Registration made on behalf of Great Britain, Northern Ireland, and the Irish Free State, had been passed into law, and the Agreement was now in force. The Departmental Committee appointed to consider the Registration of Opticians Bill, before which Mr. Eason and the President gave evidence on behalf of the Council, had reported against the Bill, which would no doubt now be dropped.

Finance.

The President concluded: "The publication in February of the Medical Register and of the Students' Register shows that the annual numbers of registered practitioners and of registered medical students continues to fall steadily from those of the post-war inflation period. In 1927 1941 new practitioners were enrolled, as compared with an average number of 2167 for the preceding seven years. The number of medical students entered in the Register was 1214, as compared with the seven years' average of 1441 per annum. The decrease in both figures is likely to continue for two or three years, more particularly as regards practitioners, for the effects of the drop in the number of students, which took place in 1923 and 1924 under the influence of the new regulations, are not yet exhausted.

"Though the decrease in annual registration is reflected in our financial statement, I am glad to say that, owing to prudent anticipation on the part of the Finance Committee, it has been discounted in advance. Our surplus for the past year is less than it has been, but it still reaches the substantial amount of £3031; while the assets of the General and branch councils have been increased by £2557. Our financial position is, in fact, sound and satisfactory."

A vote of thanks to the President for his address was proposed by Prof. J. B. Leathes and seconded by Sir Norman Walker.

Sir Donald MacAlister vacated the chair. On the motion of Sir Norman Walker, seconded by Sir John Moore, he was re-elected President for a further term of five years.

The Council then passed to the consideration of penal cases.

THE HARVEY TERCENTENARY.

BANQUET AT THE GUILDHALL

THE celebration of the Harvey tercentenary came to a fitting close, as far as the London ceremonies were concerned, with a banquet given to the delegates, and to a group of highly distinguished guests, by the Royal College of Physicians of London. For this purpose the College, through the kindness of the City of London, was enabled to receive the company in the Guildhall, where on Wednesday, May 16th, 450 persons assembled to commemorate the publication of the "De Motu Cordis" in 1628.

Sir John Rose Bradford, President of the College, presided, and, after the loyal toasts, the large company drank in silence to the Memory of William Harvey.

The toast of the Delegates was then proposed by Mr. Neville Chamberlain, Minister of Health, who set before the company an incisive picture of what the placing by Harvey of physiology upon rational grounds had meant to public health administration all over the world. With reference to his own responsibilities he described briefly our organisation for the maintenance of public health, and indicated that every branch of all these activities could be said to be regulated by the desire to maintain among the people a healthy circulation. "Our preventive medicine," he said, "is based on Harvey; the enemies against which we war are the factors which upset the balance of man's physiology, and the success which we obtain in the contest is due fundamentally to Harvey's discovery." He concluded by referring to the international character of disease, which knew no frontiers, so that the resources of all nations should be pooled to set up a common defence. He coupled with the toast the names of Prof. A. Castiglioni, the delegate from Harvey's own University of Padua, and Prof. W. H. Welch.

Testimony from Padua.

Prof. Castiglioni, speaking at first in English with eloquence and fluency, drew an admirable picture of the glories of the University of Padua at the time when Harvey was acquiring there the fundamental anatomical knowledge upon which he later erected his wonderful discovery. At that time, he said, Galileo Galilei was doing for the circulation of the heavenly spheres what Harvey was later to do for the circulation of the blood, while the men working at Padua made of the university a veritable centre of the anatomical knowledge of the world. Then, pleading for the employment of the language of Dante in setting before the audience the connexion of Harvey with Padua, he gave a fine example of what an impassioned oration sounds like in the most sonorous language in the world. He spoke of Harvey's independence and courage and of the genius which enabled him to comprehend the inter-relations of his work with that of his predecessors and contemporaries, and said that he was proud to be the spokesman for his fellow delegates in testifying to the glory of Harvey. "Harvey," he said, "discussed his researches with his co-workers in Italian, and for his armorial motto adopted the Italian words 'più arde e più splende.' We note the characteristic virtues of the English in Harvey's loyalty and sense of honour. We applaud the man of science, while we remember the man of noble courage and character, always true to his colleagues, his science, and his king; well knowing, as he says in his book, that his discovery would make for him many enemies, nevertheless, he must publish it because the truth is for him a holy law. He was, and we of Padua can say it with pride, the worthy disciple of Galileo, who to the whole scientific world gave vision where they had been blind. I must also recall to your memory the ghosts of those great men who took the earliest steps in scientific research, Vesalius, Leonardo da Vinci, who with marvellous foresight contributed to the foundations of anatomy while ranging through the knowledge of the time, Realdo Colombo, Fallopius, Cesalpinus, the noble philosopher and teacher, and Fabricius Ab Acquapendente, who discovered the valves of the veins. In this great company Harvey stands in his right place, and we revere him as the prime discoverer of the physical and physiological significance of what he had learned and observed. In Harvey's days my language was used by the scientific men of the whole world; it was spoken at the Court of Charles I., the great patron of Italian art, and in France where Maria dei Medici was the Queen of Louis XIII., and it is fitting that in that language I should address you, though speaking for the Delegates of the academies and universities of all the world. I thank you for the opportunity which you have given us all to take part in this Celebration, and I record our admiration of your country."

Prof. Welch, whose studiously quiet delivery was in acute contrast to the fiery eloquence of Prof. Castiglioni, alluded happily to the fact that at the time when Harvey made his great discovery his country and Great Britain were one. He spoke in reference to the scientific proceedings with the highest admiration of the demonstrations at University College, declaring that such remarkable reproductions of Harvey's researches must have come as a revelation to all who saw them and would remain as an inspiration to them.

The Order of Honorary Fellows.

In giving the next toast, the Honorary Fellows, Sir John Rose Bradford remarked that the institution of this order was a departure; in a sense, he said, the Marquis of Dorchester, who, after the destruction of the College library in the Great Fire, bequeathed his magnificent collection of books to the College, might be regarded as an honorary Fellow, for he was a layman, while the late King Edward VII. had also accepted from the College a Fellowship. But the institution of an order of honorary Fellows was an innovation. In accordance with their decision to create this order the College, he said, had decided to ask the Earl of Balfour, Sir Ernest Rutherford, Prof. I. P. Pavlov, of Leningrad, and Prof. K. F. Wenckebach, of Vienna, to accept the highest honour which it was within the power of the College to confer. He briefly justified the fitness of the choice. The learning and wisdom of Lord Balfour, he said, needed no dissertation from him, his deep interest in science and his many services rendered to science being well known to all. In Sir Ernest Rutherford, the President of the Royal Society, the College were honouring not only a great philosopher, but the figurehead of a great association; Prof. Pavlov, of Leningrad, would be recognised by the world as the doyen of physiology, while Prof. Wenckebach, of Vienna, had won universal fame by his studies along lines similar to those which the great Harvey had laid down. Replies were made by Prof. Wenckebach and Sir Ernest Rutherford, the latter of whom explained how Harvey had come to visualise the correct physical forces that must be concerned in the circulatory system, saying that he was the first man to apply physics to medicine.

Harvey and Linacre.

The health of the President was proposed in eloquent and humorous terms by the Archbishop of York, who said: "I have one link with this College which I greatly value—it is that its principal founder and first President, Thomas Linacre, became 440 years ago, what I still am—a Fellow of All Souls College, Oxford; and as the founder of the College shared with me the fellowship of that delightful home, I may claim to stand towards the College in the position of Founder's Kin. I venture to dwell for a moment on the claim of Thomas Linacre to special honour, even on an occasion specially commemorating William Harvey. Linacre represented

the union of medical science with literature and scholarship; he was one of the first students of Greek, a pupil of Grocyn and friend of Erasmus, Colet, and Thomas More—that band of scholars who might have changed the course of history if only men were willing to be guided by 'sweetness and light.' I hope that this union may always continue—Harvey himself was a considerable scholar—and that in spite of the claims of highly specialised study, the goodly succession of 'medical humanists' may still be maintained. Again, Linacre represented the union of medical science and the Church. He was himself, for the last 15 years of his life, in Holy Orders. No doubt this union was for a time somewhat oppressive to medical science. Theology—the queen of sciences—has been sometimes, like other queens, jealous and somewhat despotic. Her control of medicine lasted long. Only seven years before the Royal College of Physicians obtained its charter, a statute was passed requiring all those who had not graduated in medicine at Oxford and Cambridge, and who desired to practise medicine in London, to be approved after examination by the Bishop of London or the Dean of St. Paul's. How interesting it would be if that requirement was still in force! There would then be two schools of London physicians—those who had graduated in the cheerful optimism of the Bishop of London, and those who had graduated in the philosophic pessimism of the Dean of St. Paul's, or even in that sombre study of eugenics, which creates in some of us the uncomfortable feeling that it might have been better if we had never been born! Now, however, medical science has been set free to go upon its own way unhindered, and the relationship of medicine in the Church may be, and ought to be, one of cordial coöperation. For each needs the other in its own work. Medicine will teach the Church that the life of mind or even spirit is fulfilled through and conditioned by the body; the Church may remind medicine that the body is penetrated, influenced, and controlled by the spirit. Our common ground is that the body, mind, and spirit are not mere separate departments of man's nature, but parts of one whole organism which must be studied as a whole. In this study the Church and medical science should work together in the spirit of students, with open minds as befits the disciples of truth. As I propose this toast, what moves me is the thought of the constant patient research which goes on under the encouragement of the College, and its immediate application to human needs. I don't think there is any profession in which research, teaching, and practice are so close or more truly fused in one great enthusiasm of service. We have all been thinking of William Harvey pursuing his great researches in the very wards of St. Bartholomew's; and I like to think that there may be men now in the wards of our great hospitals impelled by eager quest of knowledge and by an equally eager desire to lift the burden of human suffering, and who may be on the brink of some new discovery; that, to use the words of Milton, 'there are some worthies now breathing in the air of England who shall be [like Harvey] her leaders to such a deliverance as shall never be forgotten by any revolution of time that this world hath to finish.' Of all this great ministry of research and healing the Royal College is the heart. Is it fanciful to-night to speak of its own action as resembling that which William Harvey discovered? In that heart all the results of research, which is the very life-blood of science, are tested; thence they are communicated through all the veins and arteries of a devoted profession to the whole community; and a return is made to the heart in the admiration and gratitude of the people. In order that we here, their grateful guests, may take our share in that admiration and gratitude, I ask you to honour the toast of 'The Royal College of Physicians,' and I couple with it the name of one who has signally illustrated the union of research and practice—the distinguished President."

Sir John Rose Bradford briefly replied.

A Distinguished Company.

The distinguished company present included, in addition to the delegates and the speakers already mentioned, Their Excellencies the French, the German, the Italian, the Belgian, the Austrian, the Greek, and the Finnish Ambassadors and Ministers, the Archbishop of Wales, Cardinal Bourne, the Deans of Westminster and St. Paul's, the Chief Rabbi, the Lord High Chancellor, the High Commissioner for New Zealand, the President of the Royal College of Surgeons of England, the President of the Royal Academy, the President of the Society of Antiquaries, the Recorder of the City of London, the Vice-Chancellor of the University of London, and the Regius Professors of Medicine at Oxford and Cambridge. The following acted as Vice-Chairmen: Dr. Raymond Crawfurd, Registrar; Dr. R. O. Moon, Assistant Registrar; Dr. Sidney Phillips, Treasurer; Dr. Arnold Chaplin, Harveian Librarian of the College; Dr. J. W. Carr, Dr. F. J. Poynton, and Dr. A. P. Beddard, Censors of the College; Dr. H. Morley Fletcher, Sir Hector Mackenzie, Sir StClair Thomson, Dr. J. H. Abram; and Mr. H. M. Barlow, Secretary of the College.

The Visit to Oxford.

A number of the delegates to the celebration of the Harvey tercentenary visited Oxford on May 17th and were entertained at luncheon in Harvey's College by the Warden and Fellows of Merton. In the morning the Regius Professor of Medicine, Sir Farquhar Buzzard, the Dean of the Faculty, Dr. Ainley Walker, and a number of other members of the University conducted the visitors in groups to different centres of particular interest, and at 1.15 the different parties re-united at Merton College, where they were met by the professors in the Faculty of Medicine and were received by the Warden and Fellows of the College. Luncheon was served in the College Hall to about 100 guests, and in the centre of the hall were displayed some of the College books relating to the period of Harvey's wardenship, and a bursarial account showing his signature was exhibited. The Warden, Mr. Thomas Bowman, expressed the pleasure felt by the College in welcoming and entertaining the delegates, and a brief address followed from Sir John Rose Bradford. A short account of Harvey's connexion with Merton, drawn up by Prof. H. W. Garrod, Fellow of the College, was presented to each of the guests at luncheon.

The Visit to Cambridge.

On May 18th the delegates proceeded to Cambridge, a certain number of them making the journey by car in order to visit the burial place of Harvey at Hempstead in Essex. On arrival at Cambridge they were entertained at luncheon by the Master of Gonville and Caius, Sir Hugh Anderson, and the Fellows of the College from which Harvey graduated. A brief address and welcome to the guests was given by the Master, to which Sir John Rose Bradford replied. The visitors were then taken, as on the previous day at Oxford, to various important university institutions.

Hospitals and Motor Accidents.—It appears from a letter contributed to the *Times* of May 18th by Sir Arthur Stanley, as President of the British Hospitals Association, that insurance companies are now prepared to pay the cost of hospital treatment of insured persons upon receiving from the hospital a statement of the expense incurred.—A remarkable example of the seriousness of the situation created by the great increase in the number of motor accidents is furnished by last year's experience of Chiswick Hospital, an institution of 42 beds, which was established and is entirely maintained by a private benefactor. During 1927 2431 casualty cases were treated. The number is explained by the fact that the Chiswick High Road is one of the most crowded exits from London and the principal avenue of access to the Great West Road. Almost the whole of these accidents occurred in that thoroughfare, but they do not represent the entire number, since many others were treated at the West London Hospital at Hammersmith.

Public Health Services.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

THE following are some 1927 statistics of five districts of varying local government status:—

Name of district and estimated mid-year population.	Birth-rate.	Death-rates per 1000 of the population.					Death-rates per 1000 births.		
		All causes.	Tuberculosis.	Cancer.	Respiratory diseases with influenza.	Heart disease.	Infant and neonatal mortality.	Diarrhœa, &c., under 2 years.	Maternal mortality from childbirth.
Plymouth C.B. (211,650)	16·5	12·0	1·00	1·58	2·6	1·4	61/32	4·6	7·7
Southport C.B. (78,670)	12·2	13·6	0·61	1·82	2·9	2·0	48/20	3·1	4·2
Swindon B. (57,150)	14·5	11·2	0·96	1·26	2·3	2·3	47/25	2·4	1·2
Barnstaple R.D. (18,950)	14·4	13·3	1·0	1·1	2·6	1·7	65/–	7·3	0·0
Ventnor U.D. (5,015)	11·8	15·3	0·6	1·0	3·2	3·4	17/–	0·0	0·0

Plymouth.

Dr. A. T. Nankivell describes 1927 as a year of much progress. Health education work has been enormously increased. A monthly health magazine with a circulation of 10,000 has been distributed at a slight profit. It is realised that this is a pioneer effort and that it has to be made more attractive in order to get at the people who most need instruction. Health propaganda films are generally too scientific, says Dr. Nankivell, and need to be humanised and made more entertaining. Some 450 lantern slides were exhibited 16,470 times in Plymouth cinemas and theatres. Advertisements appear in the trams and stations. A Runsyne machine with an illuminated health message has been fixed at one tram terminus. The local press helps. In fact, nobody in Plymouth needs to be ignorant of the primary laws of health. Swilly Hospital has been made into an ideal place for late cases of pulmonary tuberculosis in women. Additional outside accommodation has been found for pulmonary and non-pulmonary tuberculosis. Photographs are given of a new children's ward and a school hut at Didsworthy. An X ray apparatus is needed to enable artificial pneumothorax treatment to be carried out.

The maternity and child welfare work increases. There were 3502 births and 981 new cases attended the six antenatal clinics. Over 400 children between 6 months and 5 years of age have been immunised against diphtheria at the special clinic opened in January. The new cases treated at the ultra-violet light clinic numbered 130, mostly rickets, but including 16 cases of malnutrition and 9 of skin diseases. The results were claimed to be "very encouraging." Medical practitioners have coöperated in the investigation of the causes of puerperal pyrexia. At the antenatal clinics about 22·5 per cent. of the patients were found to have some discharge, but among the 41 (excluding the mild) cases of pyrexia investigated, auto-infection from a pre-existing discharge was not demonstrated and the influence of poor surroundings did not appear to be marked. In one case the home was dirty and two cases were nursed by untrained women with "elementary ideas of asepsis." In one case there was a suspicion of transmission of infection from a previous case. Three cases occurred simultaneously in a nursing home. Altogether 23 cases occurred in institutions "where the conditions would certainly be more favourable than the usual home surroundings." The staff of health visitors is inadequate for the work and two more "centres" are needed.

Good work is being done in house renovation under Section 3 of the 1925 Act, by which, in the default of the owner, the town council does the work and makes the cost a first charge on the property. It is estimated that £100,000 has been spent during the last three years in repairing insanitary houses. Two years ago three insanitary areas were scheduled, but little progress has been made. Plans have, however, been prepared for the reconditioning of two areas of "squalid streets." The supervision of the milk-supply has been strengthened by visits of the inspectors to the farms during the early morning milking. One of the largest dairies has installed a modern pasteurising plant and another sells sterilised milk. There is a marked increase in the sale of "designated" milks. The municipal hospitals and "centres" use Certified milk. Among 134 milk samples examined for tubercle none was found to be infected. The searching out of congenital syphilitics continues. Out of 4000 school-children examined, 86 were found to be affected. Altogether 118 children came under treatment during the year. Keratitis is the chief trouble. Many when first brought to the clinic cannot see, but improve so much under continuous efficient treatment that in time they are able to read and lead a practically normal life. A "rheumatic register" started at the beginning of the year includes the names of 56 school-children, some apparently in good health, some with chorea, and some with the heart affected. Better hospital arrangements are needed for the children attending the orthopædic clinic.

Oysters from the Tamar and St. Germans beds have to be relaid at the mouth of the Yealm for purification, and the attempt was made during the year to use the Yealm beds for breeding and rearing. The catch from the first-named beds shows a decline which has been attributed both to overfishing and contamination by oil. Complaints of the pollution of the Sound by oil, acid, and sewage have been investigated. It is suggested that the Admiralty should prohibit the discharge of oily matters within the 3-mile limit. On the other hand, it is thought that much of the oil may originate with the waste-oil of the 12,000 motor vehicles of the borough discharged into the Sound via the sewers. Investigation of the currents and winds seems to indicate that the bathing pools are adequately protected from the western but not from the eastern sewage outfalls.

The report for the Port contains a welcome reference to the conspicuous improvement in the crews' quarters of newly built vessels as regards position and construction of living space, bathrooms, and rooms set apart for meals. At the same time it is pointed out that the rat-proofing of cabins, crews' spaces, and store rooms should be made compulsory in all newly constructed vessels. Energetic efforts were devoted to rat destruction. A new rat-proof warehouse is cited as a model for imitation. Rats infected with plague, as a sequel to human plague in the Argentine, were found on grain ships from Rosario in the port of London. The examination of 122 black and 12 brown rats caught on three grain ships leaving Rosario, while plague was prevalent in that neighbourhood, gave a negative result in the case of Plymouth.

Southport.

Dr. G. C. Barnes reports that the new isolation hospital was opened in October by Sir G. Newman, who declared that he knew of no existing hospital better adapted and designed for the work contemplated, a verdict which is supported by excellent photographs of the buildings and equipment, including the sanatorium wards for tuberculosis. The X ray block and laboratory is to be completed this year. Since the first sunshine recorder was erected at Southport 36 years ago, there have only been three more sunless years than 1927. The recorded hours were 1382·4, or 148·5 hours below the normal. During the early months an epidemic of severe influenza accounted for 56 deaths. Towards the end

of the year an artificial sunlight installation was provided for the tuberculosis, school, and child welfare departments.

Swindon.

Dr. Dunstan Brewer describes how Swindon was suddenly visited by an epidemic of influenza about Jan. 15th, which reached its peak on the 24th and collapsed on Feb. 15th, leaving nothing behind it. The rapid increase of pneumonia notifications in the second week of January heralded the epidemic which attacked about a third of the inhabitants. The 56 deaths attributed to it included those of 17 persons over 70 and 5 non-residents. The deaths were due in nearly equal proportions to toxic and pneumonic forms. In June a mild type of epidemic pneumonia appeared. In mid-August 5 cases of pneumonia were admitted to hospital, 2 from the borough and 3 from outside, all of which proved fatal. The mother of one case died from paratyphoid and the brother-in-law of another developed cerebro-spinal meningitis and recovered. His wife, who was a carrier of the meningococcus, had visited her brother, the only one of this batch of fatal pneumonias who did not have cerebral disturbance. Dr. Brewer regards the prompt notification of pneumonias as of prime importance in cold climates as they are generally the first evidence of approaching epidemic trouble. If a medical officer of health can rely upon his register of pneumonia notifications he will not be caught unawares by epidemics of a dangerous or unusual character. In Swindon pneumonia has the first indisputable claim upon the accommodation of the isolation hospital. During 1927, 63 cases were removed to hospital, of whom 14 died (22·2 per cent.), while 139 were treated at home, of whom 44 died (31·6 per cent.). As pneumonia in England and Wales causes five times as many deaths as all other epidemic diseases put together and is in most infections the chief danger to life, the Ministry does well, says Dr. Brewer, to urge that it should occupy a first place in the attention of sanitary authorities. A table shows that during the last seven years there have been 1013 notifications of pneumonia in Swindon with 323 deaths, and that the case-fatality was 19·02 per cent. for hospital-treated and 34·7 per cent. for home-treated cases respectively.

As in former years all the deaths of children under 17 years of age were investigated and correlated with the known facts of their medical history with a view to the ascertainment of the main factor responsible for causing death. There were 65 deaths under 17 years, as compared with 94 and 103 in the two preceding years. There were 830 births during 1927 and 338 new cases attended the antenatal clinic. There is a great need of hospital beds for in-patient antenatal treatment. When the proposed extension of the Victoria Hospital has been carried out and the new maternity hospital has been completed (hoped for in 1929), Dr. Brewer thinks the town will be reasonably equipped except for mental and tuberculosis cases.

During 1927, 289 (including 4 municipal) houses were erected within the borough and 100 on the outside corporation estate. As the population declined by 170, overcrowding has been theoretically relieved to the extent of 1300 persons. The small amount of serious overcrowding which actually exists in Swindon can only be actually relieved by the erection of the cheapest possible houses, let at an uneconomic rent.

Barnstaple.

Dr. J. R. Harper's rural district, which covers 130,000 acres, is mostly agricultural but has a fishing industry and is a holiday health resort. He says the standard of living has considerably improved in recent years, but that much remains to be done in the replacement of picturesque but badly lighted and ill-ventilated cottages. There were no notifications of puerperal pyrexia and only one of typhoid fever, a severe case at a dairy farm, the origin of which could not be traced but which led to no other cases. A widespread epidemic of influenza is reported, 17 deaths being registered from it and 12 from pneumonia. Practically all the schools were closed for two to three weeks during February and March from this cause. No serious complaints about the water-supply were received, except from Combe Martin. During the year 33 new wells were sunk.

Ventnor.

Dr. Reginald T. Cooke mentions that three-quarters of the 77 deaths in this urban district were those of persons over 65 years of age. There were 57 births and one infant death. Scarlet fever was unusually prevalent and caused 1 death; 7 deaths were ascribed to influenza. The water-supply, from the chalk, is "intermittent" to the higher levels of the town, and Dr. Cooke thinks that tenants frequently do not exercise sufficient care in having their storage tanks periodically cleansed. The hours of bright sunshine registered at the Ventnor Hospital were 1771·6 and at Ventnor Park 1672·1. These are compared to Brighton with 1666·2 hours. Ventnor held a good position among 12 towns, which keep records of ultra-violet rays. For 3 months it was first, for 2 months second, and for 3 months third.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED MAY 12TH, 1928.

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox, 319 (last week 321); scarlet fever, 1609; diphtheria, 1110; enteric fever, 55; pneumonia, 1267; puerperal fever, 32; puerperal pyrexia, 91; cerebro-spinal fever, 11; acute poliomyelitis, 7; acute polio-encephalitis, 1; encephalitis lethargica, 21; continued fever, 1; dysentery, 9; ophthalmia neonatorum, 137. No case of cholera, plague, or typhus fever was notified during the week.

The cases of small-pox were notified from the following 25 counties: London, 5; Bedford, 6; Berks, 1; Buckingham, 1; Derby, 5; Durham, 55; Essex, 1; Gloucester, 5; Hertford, 3; Lancaster, 22; Leicester, 2; Lincoln, parts of Holland, 2; parts of Lindsey, 5; Northumberland, 7; Nottingham, 11; Soke of Peterborough, 1; Salop, 1; Stafford, 20; Surrey, 1; Warwick, 9; Yorks, North Riding, 15; West Riding, 87; City of York, 3; Glamorgan, 16; Monmouth, 35.

The number of patients in the Infectious Hospitals of the Metropolitan Asylums Board on May 15th–16th was as follows: Small-pox, 35; scarlet fever, 1597; diphtheria, 2163; enteric fever, 34; measles, 1160; whooping-cough, 148; puerperal fever, 19 (plus 15 babies); encephalitis lethargica, 66; "other diseases," 24. At St. Margaret's Hospital there were 17 cases of marasmus, and 10 babies (plus 8 mothers) with ophthalmia neonatorum.

Deaths.—In the aggregate of great towns, including London, there were 2 (0) deaths from small-pox, 3 (0) from enteric fever, 71 (37) from measles, 4 (1) from scarlet fever, 44 (10) from whooping-cough, 39 (14) from diphtheria, 44 (10) from diarrhœa and enteritis under two years, and 80 (10) from influenza. The figures in parentheses are those for London itself.

The fatal cases of enteric fever outside London occurred at Bristol, West Bromwich, and Salford. Of the 34 fatal cases of measles outside London 7 were reported from Liverpool and 3 from Sheffield; while the figures in Edinburgh, Glasgow, and Dublin for the same week were 5, 7, and 6. Of the 34 fatal cases of whooping-cough outside London 10 were reported from Birmingham and 4 from Liverpool. The two deaths provisionally classified to small-pox were assigned to Bradford and Middlesbrough.

Dr. C. V. Dingle, medical officer of health for Middlesbrough, informs us that the man who died there was 77 years of age and had long been an inmate of the Union Infirmary. There had been some cases of small-pox in the institution and he developed the disease and died one day after the rash appeared. He was in a septic condition and very feeble before he contracted small-pox. He was too ill at the time of the outbreak to revaccinate and his vaccination in infancy was indefinite. He said he had been vaccinated, but no visible marks could be made out.

The number of stillbirths registered during the week was 314 in the great towns, including 57 in London.

Correspondence.

"Audi alteram partem."

ENCEPHALO-MYELITIS FOLLOWING VACCINATION.

To the Editor of THE LANCET.

SIR,—In an account of Encephalo-myelitis following Vaccination, published in the *British Journal of Experimental Pathology* in 1926 (vol. vii., pp. 181–222), which you made the subject of a leading article on Sept. 4th, 1926, we pointed out (p. 186) that —

"the most characteristic feature of the inflammation is the occurrence in the white matter of a broad perivascular zone of softening in which infiltration is relatively slight (Figs. 4, 6, 7)";

and again in a summary of "the chief *characteristics of the inflammation*" (p. 190):—

"The most characteristic histological feature is the zone of perivascular softening in the white matter."

Further, in a histological comparison with poliomyelitis we said (p. 200):—

"the cardinal differential feature by which the conditions can be separated at a glance is the occurrence in post-vaccinial encephalo-myelitis of perivascular zones of softening of white matter";

and in a similar comparison with over 40 cases of encephalitis lethargica we said (p. 204):—

"Finally, we have not found in any case the perivascular zones of softening that are so conspicuous in the white matter of post-vaccinial encephalitis";

and again, on the same page,

"The most striking differential feature of the post-vaccinial cases is the zone of softening round vessels in the white matter."

In the "conclusions" (p. 219) in the comparison of post-vaccinial encephalitis with poliomyelitis it is said:—

"A conspicuous peculiarity is the presence of broad zones of softening round vessels in the white matter";

and in the comparison with encephalitis lethargica:—

"here again the zones of perivascular softening are a conspicuous peculiarity."

The softening is described as follows (p. 186):—

"This softening was demonstrated by the Weigert-Pal method in only one portion of tissue from Case 5, but the loss of medullated sheaths is conspicuous in sections stained deeply with hæmatoxylin, particularly Weigert's iron-hæmatoxylin. The loss of the rings corresponding to the medullary sheaths is usually associated with a spongy vacuolation of the glial net; the cytoplasm of the infiltrating cells tends to be vacuolated and occasionally is typically foam-like."

This description follows immediately upon the reference to Figs. 4, 6, 7, in illustration of our perivascular softening, and the completeness of the destruction of medullated sheaths is very clearly shown in the drawing (Fig. 7) of the highest magnification. We considered the three changes described to represent a rapid, massive destruction of medullated sheaths, some absorption of water and the presence of fat granule cells: phenomena characteristic of softening of the central nervous system when not complicated by colliquative necrosis of the supporting tissues. The employment of the term "softening" thus emphasised the apparent rapidity and uniformity of the destruction of myelin in comparison with that in the so-called primary tract degenerations. A reference on page 204 to two cases of acute disseminated sclerosis gives further evidence that loss of myelin was the essential feature of our perivascular softening.

Dr. J. R. Perdrau in a paper on the Histology of Post-vaccinial Encephalitis, contributed to the *Journal of Pathology and Bacteriology* (1928, vol. xxxi., pp. 17 to 32), found that —

"perivascular demyelination is the essential and characteristic lesion of post-vaccinial encephalitis" (p. 28).

By special stains he confirmed (p. 20) our conclusion that the destruction of myelin was exceptionally rapid. No evidence of perivascular demyelination could be found in five cases of encephalitis lethargica studied by either the Weigert-Pal or the Marchi method or by both. Perivascular demyelination was not observed in pieces of spinal cord from poliomyelitis, but the material examined was considered inadequate for a satisfactory comparison. Whilst making numerous references to our work he only mentions our observation of the destruction of myelin in a footnote (p. 18), and says we laid little stress upon the observation. The footnote reads:—

"The term 'softening' is here used in its ordinary sense of necrosis when applied to certain lesions of the central nervous system (e.g. the result of arterial thrombosis). Turnbull and McIntosh use it for an earlier stage of the process, described here as demyelination. They associated this 'softening' with 'loss of the myelin sheath' (p. 186) but laid little stress on the observation."

In Case 7 we found "a zone of softening and infiltration along each edge of the anterior septum" (p. 190); Dr. Perdrau (p. 20) refers only to our having recorded infiltration of this site. We drew throughout the paper a sharp distinction between perivascular softening and perivascular infiltration alone. Thus (p. 186):—

"Within the substance of the brain and cord infiltration is conspicuous and is essentially perivascular. Infiltrations within the adventitial sheaths or immediately round the sheaths of the vessels, forming sharply-defined vascular sleeves, are numerous. . . . The predominating lesion is a broad zone of less dense, 'extra-adventitial,' perivascular infiltration (Fig. 1). In portions of the grey matter in which this infiltration is at its maximum the perivascular distribution is less distinct, the infiltration becoming diffuse (Fig. 3). Such zones of extra-adventitial perivascular infiltration occur in the white matter (Fig. 2), but the most characteristic feature of the inflammation is the occurrence in the white matter of a broad perivascular zone of softening in which infiltration is relatively slight (Figs. 4, 6, 7)."

Then follows the description of softening which has already been quoted. Perivascular infiltration was not described as peculiar to post-vaccinial encephalitis. In the description of poliomyelitis perivascular infiltration is not denied; it is only said (p. 200):—

"The perivascular nature of the extra-adventitial infiltrations is not conspicuous."

In the description of encephalitis lethargica (p. 203):—

"In the formation of vascular sleeves, especially in initial stages, cells immediately outside the adventitia take a considerable share here as in post-vaccinial encephalitis. The disposition of the cells of the extra-adventitial infiltrations within the grey matter is very similar: a perivascular arrangement is usually distinct, . . . in one case glial cells with elongated oval nuclei are abundant round vessels in the grey matter so as to recall the perivascular infiltration without softening occasionally seen in the white matter in post-vaccinial encephalitis."

Dr. Perdrau, however, talks (p. 25) of "the extra-adventitial infiltration which Turnbull and McIntosh look upon as characteristic of post-vaccinial encephalitis," and in his summary (p. 31) says that post-vaccinial encephalitis is characterised by "demyelination (the extra-adventitial infiltration or softening of Turnbull and McIntosh)."

From careful perusal of Dr. Perdrau's paper, especially the second paragraph of page 23, we believe that this second discrepancy may be due to Dr. Perdrau possibly having found by the methods of Weigert-Pal and Marchi loss of myelin in our "broad zone of less dense, 'extra-adventitial,' perivascular infiltration" (p. 186), as well as in our zones of "softening." If that is so, it has not been clearly stated. We find it necessary to draw attention to both discrepancies, because Dr. Perdrau's paper has to our knowledge caused many to believe that we had failed to recognise that perivascular demyelination was a characteristic of post-vaccinial encephalitis and the cardinal feature differentiating that condition from poliomyelitis and encephalitis lethargica. Yet in reality it was the recognition in 1912 of this

perivascular destruction of myelin which first drew our attention to post-vaccinial encephalitis, and it was this perivascular destruction of myelin on which we laid such stress in a report in January, 1924, on the histology to the first commission appointed by the Ministry of Health, in a demonstration to the commission in the following month, which included the actual fields from which our figures 7 and 8 were drawn, and in our publication of 1926 referred to above.

We are, Sir, yours faithfully,

HUBERT M. TURNBULL.
JAMES MCINTOSH.

Bernhard Baron Institute of Pathology,
London Hospital, E., May 16th, 1928.

LEGAL AID SOCIETIES AND THE MEDICAL PROFESSION.

To the Editor of THE LANCET.

SIR,—The case decided in the King's Bench Division recently in which damages were awarded against a solicitor for maintenance and champerty—proceedings by which a person bargains to carry on a suit in which he has no legitimate concern in consideration of the damages which might be recovered in the suit—is of interest to the medical profession. Legal aid societies are more or less exclusively engaged in claims for personal damages. They get their information as to accidents from different sources. To make a claim they require a solicitor and doctor who are willing to work on a speculative basis. The poor person would appear to have little or no other alternative but to seek their aid when claiming damages to which they might be entitled. As a result of this case, and having regard to the medical aspects involved, will not the General Medical Council take action? Apart altogether from any question of liability, the first member of the "syndicate" to receive actual cash out of one of these cases is the doctor acting on behalf of the solicitor who gets a fee from the other side for a consultation. It is in this direction that I would suggest a very necessary and equitable reform in the present state of affairs. In my opinion, in cases of this kind, "running down," "third party," &c., no such consultation fees should be paid till liability is admitted or established. Medical fees and expenses would then be included in the costs of the case whether it was settled in or out of court.

I am, Sir, yours faithfully,

J. J. SCANLAN.

Old Broad-street, E.C., May 13th, 1928.

EPIDEMIC CATARRHAL JAUNDICE.

To the Editor of THE LANCET.

SIR,—Although engaged in other problems now, I read with much interest Dr. Athole Ross's note on the pathology of epidemic catarrhal jaundice in your issue of March 24th (p. 599). May I first remark that Sir George Buchanan will probably take exception to an observation therein erroneously attributed to him, and quoted from the Ministry of Health Report No. 42, in which certain views of the present writer are cited.

My main object, however, in writing is to explain that my translation to South Africa in 1926 was responsible for not fulfilling an implied promise in a statement mentioned by Dr. Ross, "that fresh material is being investigated with a view to discovering bacterial infection." I had become convinced at that time, both from clinical and bacteriological experience of the small outbreaks of jaundice amongst school-children I had carefully investigated, that none conformed from the aspect of clinical findings, incubation period, bacteriological and experimental results to that of spirochætal jaundice. Apart from the report of a small epidemic of spirochætal jaundice by D. M. Lyon and myself, published [1] in 1925, where cognisance was taken of both incubation and invasion periods to strengthen the diagnosis, few if any other epidemics of mild jaundice in Britain have been definitely proved to be of spirochætal origin. The presence of spirochætes in the urine of young subjects with mild jaundice is in my opinion a mere trap for the unwary, which only experience teaches one to avoid. Hence in outbreaks of jaundice amongst school-children or in families, where case-to-case infection rapidly occurs, spirochætal jaundice can be ruled out, which opinion has also been expressed by such authorities as Stokes and Ryle. I would further add to this—in spite of the presence of spirochætes obviously not leptospiræ in the urine, as the latter are so distinctive whether alive, degenerated, or dead.

In conclusion I would like to mention that the future line of investigation I had in mind in 1926 was to attack the problem of epidemic catarrhal jaundice from the point of view of a descending infection, possibly from the naso-pharynx, as a number of my cases exhibited initial catarrhal symptoms. So to the suggestion made by Dr. Ross regarding complete bacteriological examination of the excreta, I should like to add that naso-pharyngeal swabs be examined at the onset, and most important of all the application of bile drainage, which I had chiefly in view, for the purpose of a bacteriological examination of both duodenal contents and bile. This, however, I realised would present no little difficulty in such young subjects, but it may be practicable in older school-children.

I am, Sir, yours faithfully,

GEORGE BUCHANAN, M.D., D.P.H.,
Superintendent, Routine Division, South African
April 25th, 1928. Institute for Medical Research.

[1] THE LANCET, 1925, i., 504.

INDICATIONS FOR TONSILLECTOMY.

To the Editor of THE LANCET.

SIR,—In your issue of May 12th Dr. C. J. McSweeney writes: "To say what is or is not an healthy tonsil is a very much more difficult task than to record whether or not the tonsil is of normal size," and further, "If enlargement is to be taken as the expression of past infection, it is clear that the Cardiff figures do not support the conclusion of the B.M.A. Subcommittee." As I believe mere enlargement is not to be taken as the expression of past infection, I suggest the following indications for tonsillectomy.

I have followed the results of Crowe's[1] work, which I present here, in deciding whether tonsils are diseased or not. There is normally a hyperplasia of the tonsils and adenoids between the ages of 3 and 12 years. Tonsils and adenoids are physiological important parts of the mechanism that protects the lower air passages from dust and organisms. An enlarged tonsil ought not to be considered diseased unless the tonsillar lymphatic gland[2] is enlarged or the patient has had an attack of tonsillitis or a peritonsillar abcess, or the anterior pillars are adherent to the tonsils, or pus can be squeezed from the tonsils by making pressure on the anterior faucial pillar, or the tonsil has been partially removed or cauterised, causing occlusion of the crypts. Tonsils that have been damaged by previous infections or partial operative procedures are prone to give rise to general disorders following an acute attack of chronic tonsillitis. If a child has a focal infection and has had one attack of acute follicular tonsillitis, I would remove the tonsils, as the absence of signs would not exclude the presence of a small chronic intra-tonsillar abscess. Thus, even in the presence of a focal infection, I would not remove large tonsils unless one of the above signs demonstrating infection was present.

The tonsils most prone to cause focal infection are, I believe, the small fibrous tonsils, from which pus can be expressed or which are adherent to the faucial pillars. In children I chiefly rely on the enlargement of the tonsillar cervical gland as the sign of tonsillar infection. This gland is palpated just above the hyoid at the anterior border of the sterno-mastoid, if the examiner stands behind the patient. Another

[1] Crowe, S. J., Watkins, S. S., Rothholy, A. S.: Bull. Johns Hopkins Hospital, 1917.
[2] Cervical Lymph Nodes, Ann. Surgery, 1905, xlii., 49–74.

sign of chronic tonsillitis, to which Pavey-Smith[3] has called attention, is redness limited to the tonsil and its immediate surroundings, and especially a vertical red streak about one-eighth of an inch wide running the whole length of the anterior pillar. Lott[4] has also described and Chevalier Jackson illustrated a similar sign. It consists of a narrow, sharply limited and very dark red zone on the anterior pillar in front of the tonsil. Lott regards it as an important distinguishing feature of an infective tonsillar focus in which streptococci predominate. In Lott's experience when a tonsillar focus of this nature is present tonsillectomy will yield good results in arthritis, neuritis, &c.—I am, Sir, yours faithfully,

W. S. THACKER-NEVILLE,
M.D. (T.C.D.), F.R.C.S. Edin.

Harrogate, May 24th, 1928.

THE TREATMENT OF ULCERATIVE COLITIS.

To the Editor of THE LANCET.

SIR,—The discussion on ulcerative colitis at the Harveian Society[5] did not evince nearly so pessimistic a view of the results of treatment, medical or surgical, as correspondents have assumed. The appearance of pessimism is probably due to a very grave series of figures quoted by one speaker. The results which I gave personally when opening the discussion are as follows: Among 15 private patients since the war 2 have died; both these finally died in hospital. These are the only deaths which I have had in hospital and there have been 10 other hospital patients, a total of 2 deaths among 25 patients. None of these cases was treated surgically. May I repeat the opinion expressed in the discussion that there is no justification for the appalling mortalities recorded?

One often reads such statements as "medical treatment was tried and failed." The question, of course, arises as to what was the medical treatment adopted. As it is laid down in the literature and actually applied in practice, medical treatment not uncommonly resolves itself into a combination of opium, starvation, and medicated enemata, a course of treatment which would produce ulcerative colitis in most healthy persons. I am not here criticising surgical treatment—that is appendicostomy—as described by Mr. Norbury at the Harveian Society discussion, and by Mr. Lockhart-Mummery in your columns. It is a valuable and rational procedure though, I believe, unnecessary. But a protest is needed against what is described and employed as "medical treatment." There is at present in the wards at St. Thomas's a girl who illustrates what can be done in a very severe case by the methods I described at the Harveian Society. On commencing treatment her weight was 52 lb., and she had been losing ground rapidly. She now weighs over 8 st. I would like also to mention the question of diet which I did not refer to at any length during the discussion at the Harveian Society. I agree with everything which Mr. Lockhart-Mummery has said in his letter as to the importance and possibility of giving a considerable diet. It is pitiful to recognise that cases of ulcerative colitis are often starved not by the diarrhœa but by unnecessary deprivation of food.

I cannot comment on the favourable results of serum treatment which Dr. Hurst and Dr. Ryle have obtained. This has, unfortunately, not been the experience of myself and many others. But I am certain that neither of these experienced physicians have followed the crudities of what is usually described as the "medical treatment of ulcerative colitis."

I am, Sir, yours faithfully,

H. LETHEBY TIDY.

Devonshire-place, W., May 21st, 1928.

[3] Pavey-Smith, A. B.: Practitioner, 1922, i., 2–71.
[4] Lott, H. H.: Surgical Clinics of North America, 1924, iv., 66.
[5] See THE LANCET, April 28th, pp. 857 and 865, and subsequent correspondence.

TUBERCULOSIS AND EMPLOYMENT.

To the Editor of THE LANCET.

SIR,—Medical men who have to deal with large numbers of employees must often be, as I frequently am, in considerable difficulty in deciding the important question: how far they are justified in sending back to sedentary occupations officials and employees who have tuberculous disease of the lungs, where the lesions are still unhealed. It is generally assumed, rightly or wrongly, that in phthisis, where tubercle bacilli are not found in the expectoration, it is safe to send the patient back to work under ordinary office conditions. This may, or may not be wise, but it is a line of conduct which I think most of us follow. The class of case which gives me anxiety, and which must be a source of uncertainty to others, is where there is an unhealed tuberculous lesion of the lung, with tubercle bacilli still present. In these cases there is often a very considerable increase of weight, the patient looks well, his cough is slight, he has a minimum amount of expectoration, *but* the tubercle bacilli are still present. Frankly I find a proper decision in this class of case an exceedingly difficult one, having in mind the conditions under which work must necessarily be carried on. It would be interesting to know what the view of the Ministry of Health is. So far it seems to have remained discreetly silent, and I fear the only answer we shall ever get is that "it depends on circumstances"—and this does not take us any further.

I am, Sir, yours faithfully,

JOHN COLLIE.

Porchester-terrace, W., April 27th, 1928.

CONDITIONED REFLEXES IN ASTHMA.

To the Editor of THE LANCET.

SIR,—When demonstrating the wide applications of Pavlov's work in a leading article last week you put forward an asthma theory which has been so often advocated by psychologists that I should like—once more—to give a fraction of the case against it.

No one can doubt the great part played by psychological reflexes in producing the asthma syndrome. It is perfectly true that—to take hay-fever for one example—a hay-fever patient develops what I take to be a conditioned reflex from, say, the sight of a sunny hayfield; he may even develop such a reflex from the sight of a rose made of wax if he happens to think that his trouble derives from roses. This does not explain how he can infallibly (and at any time of the year) pick out by a skin reaction a watery extract of grass pollen from a dozen other unknown fluids. The observer may make him expect that one of the other fluids will give the specific reaction, but his skin is not deceived. A worse difficulty for those who believe that a primary emotional stimulus provokes the disease is the Prausnitz-Küstner reaction. These workers found that the liability to the disease may be transferred to a normal individual (or to a part of him) by injecting into him serum taken from a patient who is liable to an attack. It is difficult to see how one could transfer the liability to a conditioned reflex in this way.

I am, Sir, yours faithfully,

Devonshire-place, W., May 21st, 1928. J. FREEMAN.

IMPORTATION OF YATREN.—Representations haye been made to the Board of Trade that yatren (iodo oxyquinoline sulphonic acid) should be exempted from duty under the Safeguarding of Industries Act (1921) on the grounds that it is not made in any part of His Majesty's Dominions in quantities which are substantial having regard to its present consumption in the United Kingdom, and that there is no reasonable probability that it will within a reasonable period be made in His Majesty's Dominions in such quantities. Communications concerning these representations may be addressed to the Principal Assistant Secretary, Industries and Manufactures Department, Board of Trade, Great George-street, London, S.W. 1, before June 15th.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

NATIONAL HEALTH INSURANCE BILL.

Experimental Clinics.

ON Clause 14,* which deals with surplus funds of approved societies, Mr. RHYS DAVIES moved in Subsection (3) to leave out para. (7). He said that he understood the Minister of Health and the Parliamentary Secretary to say on the second reading of the Bill that it was the intention to set up experimental clinics in respect of dental and ophthalmic treatment. He took it that the whole country could not be covered with clinics, and that when a clinic was set up in a particular town, the insured person could not be compelled to attend it. If they compelled him they took away his freedom of choice. He would like the Minister to make it perfectly clear that there would be freedom of choice. This was one of the most important clauses in the Bill. The two professions, the dental and the optical, fell into different categories. The dental profession had definitely secured their status. The antagonism between them and the British Medical Association was not as great as the antagonism between the medical profession and the people who practised optics. An approved society at the present time did not compel an insured person to go to an ophthalmic surgeon but some approved societies would pay the expenses of an ophthalmic surgeon, who would give the patient a prescription to take to the optician who provided the glasses. The ideal would be to send every insured person to a qualified medical man who had specialised in eye diseases, and for his prescription to be made up by an optician, but as a member of the Departmental Committee which had inquired into the registration of optical practitioners, he was satisfied that many of them would be dead before that ideal stage was reached. Did the Minister intend to lay down by regulation that all insured persons must in the first place be sent to a specialist in eye diseases to obtain a prescription and then take it to an optician, or did he propose to have the dual method of treating these people by allowing the two systems to continue?

Dr. VERNON DAVIES said that the majority of general practitioners had no interest in the examination of eyes for spectacles. The British Medical Association stated that there were in this country about 1000 doctors who were experts in ophthalmology, and who were prepared to work under the scheme. The hon. Member said that perhaps this number was not enough. What he (Dr. Davies) suggested was that the British Medical Association and the profession generally should be given a change. If they undertook to do this work it should be the duty of the Minister to accept their offer to run the scheme.

Mr. CHAMBERLAIN said that he had already given a definite pledge in the House of Commons that a free choice must remain a cardinal feature of any scheme that was introduced. He was prepared to accept an amendment which would place the point beyond all doubt. It was an amendment standing in the name of Mr. Whiteley which would be moved at a subsequent stage. He was quite prepared that the normal course which he would pursue was that if he found it necessary to enter into arrangements through his Department without the assistance of representatives of other bodies, before coming to a final conclusion with any of the professional bodies with whom he might be negotiating, he would submit the proposed terms to the Consultative Council so that the views of the societies as a whole could be stated. He certainly did not intend to authorise the setting up of a dental clinic by an approved society managed solely by that society. These experimental clinics were to be experimental and managed by a joint body representing both the professional classes and the representatives of approved societies. He thought the Committee fully appreciated the difficulties in connexion with the question of the opticians and the ophthalmologists. They had a large number of cases of eye defects which were due to some mechanical fault in the construction of the eye, and all that was required to put them right was to fix a glass suitable to correct the mechanical fault. On the other hand, there were other defects of sight not caused by mechanical alterations or faults in the construction of the eye, but were caused by disease. He was advised that it was not always a simple matter to decide whether the trouble from which the patient was suffering was due to disease or to a mechanical condition of the eye which might or might not have been caused by disease. If it had been brought about by disease it was a matter upon which skilled advice was necessary. What one obviously desired to obtain was that the insured person should have the opportunity of getting in every case such advice as would give him the treatment he required, or the correct mechanical appliance, if that were necessary. He did not think it was possible at that stage to lay down a general rule or regulation providing that every insured person who was suffering from an eye defect must go to an ophthalmic surgeon first. There was not always such a surgeon handy, and it was not the intention of the regulation to enforce a practice which he did not think could actually be carried out.

Lieut.-Colonel FREMANTLE said he had been asked by the representatives of the Dental Service Association, and also the British Dental Association, to bring this question forward. The Dental Association felt very strongly the danger that clinics might be set up and managed by approved societies and that they might get back to the old position which was certainly not in the interests of the insured person, under which medical and dental clubs were run by approved societies who made a profit out of the professional work, and did not give proper attention to medical considerations. That difficulty was met in general by the Insurance Act, and they did not want to get to that situation. He thought he might say for the medical profession generally that in this matter they would support the dental profession, and they were opposed to any such practices as those he had mentioned. The Minister had said that he was ready to provide that no clinic should be managed by an approved society. He (Lieut.-Colonel Fremantle) was not competent to give the opinion of the societies that had approached him, but they suggested that there were dangers if any body of persons set up a clinic, and they would naturally demand to have a voice in the management. They trusted to the Minister to see that regulations were made providing that the management must give fair weight to professional circumstances and considerations and should not unduly consider the financial side and strength of approved societies. He thought the Minister had made out a case for regulations which, speaking from a point of view of administration, they could not resist. He wished, however, that the procedure could be improved so as to give them greater facilities for supervising the regulations.

Colonel SINCLAIR said that notwithstanding the substantial concession which the Minister had given, particularly to the medical men, for which he was grateful, he had some anxiety about the sanctity of the free choice of dentist in respect of the dental clinics. The Act of 1921 required that dentists should be registered, and a very heavy annual fee was obtained from them not only for registration at the beginning, but also for renewal each year. One's sympathies went out to the struggling dentist, and he would like an assurance from the Minister on one point. In establishing the dental clinics under this Bill certain dentists would be selected to serve, and it seemed to him that those dentists would be placed in a favourable position as compared with outside dentists. They had had an assurance that there would be a free choice of dentists, but he would like to know how the competition between the dentists who were connected with the clinic and the outside struggling dentists would be maintained.

Mr. CHAMBERLAIN: I am afraid that I cannot give my hon. friend any further assurance than that I gave most definitely to the House.

Mr. DAVIES's amendment was, by leave, withdrawn.

Further Amendments.

The following amendment in the name of Mr. Whiteley was agreed to without discussion:—

In Subsection (3), new Subsection (7), at the end, to insert the words: "Provided that such Regulations shall not restrict the right on the part of any insured person to obtain treatment from any practitioner, clinic, or other institution with whom arrangements with respect to that form of treatment have been made in accordance with the Regulations."

Mr. WOMERSLEY moved the following amendment:—

In Subsection (3), new Subsection (7), after the words last inserted, to insert the words: "Provided that any Regulations made under the Act shall not restrict the right of any insured person to obtain ophthalmic treatment of an optical character from any optical practitioner who has been hitherto engaged in sight testing and the supply of optical appliances under the National Health Insurance Acts and whose qualifications may be regarded by the Minister of Health as providing a safeguard in these respects."

The amendment was negatived.

Mr. BRIANT moved:—

In Subsection (3), new Subsection (7), after the words last inserted, to insert the words: "Provided that no such Regulation shall provide for or authorise the establishment of a dental clinic by an approved society or the use of the funds of such society for the purpose of defraying the cost of the equipment for or maintenance of such clinic, nor shall such Regulation in any way specify the dentist or clinic or other institution from whom any insured person is to receive treatment or in any way

* The first part of the discussion on Clause 14 appeared in our issue of last week (p. 1047).

restrict the right of any insured person to select the dentist or clinic or other institution from whom such person wishes to receive treatment."

The amendment was negatived.

The Committee adjourned.

The National Health Insurance Bill was further considered by Standing Committee C of the House of Commons on May 8th. Sir R. SANDERS was in the chair.

Employment Within the Meaning of the Act.

On Clause 17 (which amends the principal Act as to employments within the meaning of the Act),

Sir KINGSLEY WOOD (Parliamentary Secretary to the Ministry of Health) moved an amendment providing that the Minister of Health might make a special Order in cases where there was more than one owner of a fishing vessel, providing that a specified person should be deemed to be the employer for the purposes of the Act. He said the object of his amendment was to bring under the National Health Insurance scheme workers such as shore fishermen, who were at present excluded on the ground that they were not technically employed under contract.

After some discussion Sir Kingsley Wood's amendment was agreed to on his giving an undertaking that before his Department prepared the special Order, and considered who would have to make the contribution in respect of the employer, they would consult the local associations and other bodies on the subject.

New Clauses.

Sir KINGSLEY WOOD moved a new clause providing that regulations might be made requiring that in the case of investments arising out of business under the Act they should be transferred to the joint names of the Minister of Health and two or more of the trustees of an approved society; or, if the society so requested, to the name of the Minister alone.

The clause was agreed to, and added to the Bill.

Sir H. NIELD moved a new clause empowering insurance committees to make contributions to a fund to provide superannuation allowances or other benefits for their officers or servants.

Sir KINGSLEY WOOD accepted the clause, which he said was so drafted as to enable the Minister of Health to satisfy himself, with the advice of the Government actuary, that any scheme designed for the benefit of staffs of insurance committees was sound, and power was also given to them to review the operation of the scheme from time to time.

The clause was agreed to, and added to the Bill.

Maternity Benefit.

Dr. DRUMMOND SHIELS moved the following new clause:—

Subsection (1) of Section 14 of the principal Act shall have effect as if the following words were added at the end thereof: "in addition to treatment and attendance by a duly qualified medical practitioner or by a duly certified midwife."

He said the amount of maternity benefit provided by the principal Act was 40*s.*, and the new clause would provide that this amount of benefit should be given in addition to treatment and attendance by a duly qualified medical practitioner or by a duly certified midwife. While the problem of maternal mortality was a very difficult one and included many factors, there was no doubt that the importance of adequate attendance at the time of birth, and for a certain time thereafter, was recognised as one of the most important elements in the problem. It was quite well known that the amount of money which was given for maternity benefit, and which had in a number of cases been increased beyond the sum mentioned in the Act, was not always expended for medical attendance or for the attendance of a midwife; and one could easily understand why that should be so. Whatever difficulties might be found in the working out of this clause they ought to be faced and surmounted. The country was very much concerned at the fact that while they had reduced ordinary mortality-rates very considerably, and were steadily and constantly reducing infantile mortality-rates, the mortality-rate for women in and immediately after childbirth had practically remained stationary for the last 100 years. As a partial attempt, at any rate, to solve this problem, he thought the committee would do well to accept this clause.

Sir KINGSLEY WOOD said he thought the whole committee would be quite sympathetic with the object which Dr. Shiels had in view. The Minister of Health was very much interested in, and concerned with, the question of maternal mortality. The committee would be well aware of the steps which his Department were taking to get more light upon that difficult problem. But he could not advise the committee to accept this amendment for two reasons. The first was the purely technical one, that if Dr. Shiels wanted to deal with the provision in relation to maternity benefit, he ought to do so under Section 10 of the original Act. But the real reason was that this amendment, if it were adopted, would cost the National Insurance scheme an additional £1,500,000 a year. Dr. Shiels did not tell them where he was going to get this money from. It was obviously impossible at this stage of the Bill to accept an amendment of this kind, which would seriously upset the finances of the whole scheme, and put the approved societies under great difficulties.

Lieut.-Colonel FREMANTLE said he was glad to hear from Sir Kingsley Wood that there was no dispute as regards the serious question which was raised here, and the necessity for facing it. It was a matter to which he hoped the approved societies would turn their attention. He was afraid that approved societies did not always look at matters from the same point of view as he did.

Mr. RHYS DAVIES: As the medical profession do!

Lieut.-Colonel FREMANTLE said those societies were very often concerned with the financial needs of their members instead of with their medical needs. They had, however, to face the fact that, as Sir Kingsley Wood had pointed out, they could not raise the £1,500,000 necessary under this amendment, but he wished again to enforce what he hoped was the general sense of the committee and of the House—namely, that it was necessary to meet the very serious needs which had been referred to, and he was very glad that the Parliamentary Secretary had expressed his official sympathy with that object.

Dr. SHIELS said he quite recognised that at present, according to the system and arrangement of the scheme, there was no money available, but it was quite obvious from reading the report of the Royal Commission that money could be obtained if certain arrangements were made. He was very anxious that approved societies, as well as some others, should take this matter into very serious consideration, and should be willing to agree to certain arrangements which might make what he had suggested possible. The first consideration under the Act was to give an adequate medical service, and he certainly thought that medical or midwifery attendance, which was recognised to be of first importance, should be a statutory benefit. He had put this amendment forward to emphasise that view, and having done so he would ask leave to withdraw the clause.

The clause was by leave withdrawn.

Dental and Ophthalmic Treatment.

Mr. RHYS DAVIES moved a new clause providing that dental and ophthalmic treatment should be included in the list of statutory benefits under the Bill.

Sir KINGSLEY WOOD said that a complete dental service, which they all agreed would be eminently desirable, would cost about £4,500,000 a year, and would add to the contributions in connexion with national insurance about 1½*d.* a week. Obviously this amendment must fall to the ground, because there was no financial provision to meet such a charge. While they could understand a member of the medical profession not paying much regard to where the money was coming from, they did expect a little more from Mr. Rhys Davies.

Lieut.-Colonel FREMANTLE: I must protest against that remark about the medical profession.

Mr. RHYS DAVIES asked leave to withdraw the clause. The clause was by leave withdrawn.

Other Amendments.

Mr. RHYS DAVIES moved a new clause empowering an approved society with branches on a two-thirds vote to contribute a proportion not exceeding one-third of the distributable surpluses of the branches to the creation of a central fund which would provide the members with a specified minimum of additional benefits.

Sir KINGSLEY WOOD opposed the new clause on the grounds that the societies were themselves divided upon the proposal, that the Royal Commission had made no recommendation on it, and that the Consultative Committee had also made no suggestion with regard to it.

The amendment was defeated by 21 votes to 11.

Dr. WATTS moved a new clause providing payment for X ray examinations in cases of fracture or suspected fracture where such examination was recommended by the insurance practitioner.

Sir KINGSLEY WOOD said he hoped Dr. Watts would not press this amendment, which, though it might be desirable, would mean increased cost.

The clause was negatived.

Dr. SHIELS moved an amendment to the first schedule of the Bill (which is to be substituted for the third schedule to the principal Act). The amendment proposed to add at the end of paragraph 1 the words "in the case either of all members of the society or of such of them as have any children or any specified number of children wholly or in part dependent upon them." He said the schedule dealt with the additional benefits which were allowed to be given. There were some additions, but there were at least two items which were left out, and which were in the original

Act. The effect of the amendment would really be to replace paragraph 1 as it originally stood. The principle of dependent's allowances had been admitted by the Unemployment Insurance Act, and it was agreed that it worked equitably, and gave a fairer distribution of the money available than a flat rate to the recipients quite independent of the burdens or dependents which they had. Therefore he did not consider it desirable or wise to drop altogether from the schedule, what was regarded by the Royal Commission as a very important item, and he did not quite see why it was done.

Sir KINGSLEY WOOD said this provision had been deleted from the scheme, not at the instance of the Ministry of Health, but on the direct recommendation of the Royal Commission. If they were going to have a scheme of allowances to dependent children they should not allow a society here and there to put into operation a scheme of this kind, which was very unfair to other societies, but they should do it as a general scheme under the Act.

The amendment was rejected by 17 votes to 8.

The committee adjourned.

Additional Benefits.

The committee further considered the Bill on May 10th. Sir R. SANDERS was in the chair.

On the First Schedule (which deals with additional benefits),

Lieut.-Colonel FREMANTLE moved to insert after paragraph 7 the following new paragraph: "The payment of the whole or any part of the cost of medical or surgical advice or treatment by any registered medical practitioner, not being advice or treatment within the scope of any other additional benefit or of medical benefit, under a special scheme approved by the Minister for the purpose." He said this new paragraph was passed unanimously at a meeting of the Parliamentary Medical Committee last week, and he thought it represented the general opinion of the medical profession. They wanted to extend the Insurance Act as far as possible by degrees where required, supplementing it where possible by skilled advice. They all knew the limitations of the Act, but they also recognised that there were great advantages in having expert advice from time to time in various forms. First of all it took the form of surgical operations or advice by surgeons, who from the nature of their work, and their eminence, could not be retained permanently as part of the panel system. Secondly, it required skilled consultation, which would often save a very great deal of sickness, and therefore would be an economical proposal in order to give real assistance to panel practitioners. In the third place it included special treatment, such as X ray treatment and other specialties. From the medical point of view he objected to the first seven places in the Schedule being taken up by what were really cash benefits. Medical men looked upon the insurance scheme as one for prevention and treatment, and on cash benefits as being only secondary to that. Therefore, though he should prefer to see this new paragraph at the top of the schedule, he moved it as No. 8 in order that it might take priority of the other additional benefits which more or less corresponded to some form of medical treatment. This proposal was economical, elastic, and optional; and he thought it should meet with general support.

Dr. SHIELS, in supporting the amendment, said he regarded it as a very unsatisfactory substitute for the provisions made in line with the recommendations of the Royal Commission as part of the statutory benefits. The Royal Commission recommended this as the very first necessary change to provide an adequate service. At present they had a scheme which was called the National Health Scheme, which was incomplete, and left out at the most important time the services to insured persons of a specialist, who might be able by early intervention to prevent very serious happenings. However, as a second best it was important that this should go in under the heading of possible additional benefits. The health side of the National Insurance scheme had not been so prominent, or so much emphasised, as it ought to have been. He hoped the Government would accept the amendment.

Mr. MELLER said he would have been very kindly disposed towards the amendment if there had been a proper realisation of what the schedule really meant. Dr. Shiels imagined that the recommendations of the Royal Commission included one that specialist service should be extended to additional benefits. As a matter of fact, the Commission recommended that there should be an extension of the medical service as a statutory benefit as and when the money was available. What was happening to-day in regard to additional benefits in the nature of medical benefits was that the medical profession and the hospitals as well were saying to the people who were in the habit of going to a hospital for extended service, which could not be given by the panel practitioner, that if their society was providing dental and ophthalmic treatment the help originally given by the voluntary hospitals must be cut off. If this proposal were accepted within the scope of additional benefits he was afraid that there would be more pressure put by the medical profession on insured persons to get their societies to devote a proportion of their surplus funds for the provision of this benefit. He agreed that this would be for the benefit of the insured persons, but incidentally and materially it would also be for the benefit of the medical practitioners. What the Royal Commission said was: "We realise the necessity for extended medical service," and putting it in the order in which they recommended these things, they said "as soon as possible and as soon as the societies have funds let us have this extended and complete system of service as a statutory benefit." They were not dealing that day with it as a statutory benefit, and therefore he thought the committee ought not to consider it.

Mr. RHYS DAVIES said if this proposal were adopted, the ordinary patient would go to his panel doctor, who might say to him that the disease from which he was suffering could not be treated by him as a panel practitioner. The patient would have to come to the doctor in another category. The panel doctor might say to the patient: "You require specialist service, and you must ask me to give you specialist treatment, and I can get paid for that under this new provision." They already had 16 additional benefits, not more than half a dozen of which had ever been adopted. What was the use of deceiving the insured population by pretending they were going to do something they knew full well could not be done?

Mr. CHAMBERLAIN (Minister of Health) said he agreed with Mr. Davies that it was a mistake to add benefits which were not likely to be used to the number of benefits already existing, thereby encouraging competition among the societies. But when the hon. Member went on to argue against the provision of a specialist service as an additional benefit on the ground that it was going to lead to the exploitation of the insured person by the medical practitioner, he would point out to him that that argument would apply just as much to the provision of the specialist service as a statutory benefit as to its provision as an additional benefit.

Mr. RHYS DAVIES: I agree.

Mr. CHAMBERLAIN said that Mr. Davies, therefore, was arguing against the provision of a specialist service at all. There he came into conflict, not only with Dr. Shiels, but with the Royal Commission, who decided that the advantages and benefits to the insured population of having recourse to specialists outweighed all the disadvantages. It was only the fact that the method of providing these services recommended by the Royal Commission was so strongly objected to by the approved societies themselves that prevented specialist service becoming a statutory benefit. A panel doctor could not pose as a specialist and extract fees from his patients as a specialist unless first of all he satisfied his insurance committee on two things—that the particular complaint he was treating was beyond the competence of an ordinary general practitioner to treat, and that he himself possessed the competence as a specialist to treat it. He (Mr. Chamberlain) thought that ought to be a safeguard against any general malpractice such as had been suggested.

Mr. RHYS DAVIES: Has the right hon. gentleman's Department ever been able to say where the dividing line comes in between specialist treatment and the ordinary medical practitioner's work?

Mr. CHAMBERLAIN: I am told that there are dozens of decisions.

Mr. RHYS DAVIES: That makes my case all the stronger.

Mr. CHAMBERLAIN said that he would tell the committee the argument which finally decided him in favour of the amendment. In paragraph 15 of the Schedule one of the additional benefits already provided was:—

> "Payments to approved charitable institutions in respect of any treatment of members required for the prevention or cure of disease, not being treatment within the scope of any other additional benefit or of medical benefit."

That meant that a society could select as an additional benefit specialist treatment in an approved charitable institution. It had been argued that that was weighing the balance unfairly against treatment by the private practitioner, and that if they said that specialist services might be provided in institutions they ought at least to give the society the opportunity of getting those same specialist services through private practitioners if they preferred it. He thought that there was something in that argument. The acceptance of Lieut.-Colonel Fremantle's amendment would remove any stigma of preferential treatment in this matter; it would make a fair distribution. Societies were not obliged to adopt this particular benefit, and if it was not adopted it could be removed from the list at some future date.

The amendment was agreed to.

Lieut.-Colonel FREMANTLE moved to insert in the First Schedule after the words agreed to. the following new paragraph: "The payment of the whole or part of the services of a midwife or medical practitioner in cases of confinement." He said that he was sorry that on the previous amendment he gave Mr. Rhys Davies the impression that he was putting forward something in the name of the medical profession in their own interests. He entirely dissociated himself from that idea. They were dealing with this matter from the point of view of the public service. They knew the very difficult cases which midwives had to deal with and how they were accountable, among other causes, for the terrible maternal mortality which was one of the chief things which the health system of this country had to deal with. Statutory maternity benefit was cash benefit, and the result was that in many cases the maternity benefit was eaten up by other necessities and proper provision was not made for the attendance of a midwife or a medical man. He put in the words "or general practitioner" in order to include all cases, but he asked that approved societies might be allowed, as was the case now in some societies operating in rural areas, to provide for the services of the midwife herself in addition to the payment of the standard cash benefit.

Sir KINGSLEY WOOD said that standard maternity benefit was 40s., but a very large number of societies had increased it, and the average amount paid was about 46s. There had been a tendency from the first for the whole of the sum paid by way of maternity benefit to be demanded as a fee by the doctor attending the confinement and as the amount had increased from 30s. to 40s., and later to an average of 46s., so the doctor's fee had shown a tendency to increase pari passu. He agreed, however, that there was a good deal to be said for a reconsideration of the methods by which they dealt with this matter under national health insurance. At the present time a subcommittee of the Consultative Council were considering it to see whether any recommendations could be made and whether any agreement could be obtained. In the meantime he did not think it was desirable to include in the list of medical benefits an item of this character.

Dr. SHIELS said he thought that Sir Kingsley Wood had very adroitly taken advantage of the prejudice of certain hon. Members against the medical profession. Everyone was agreed that the Ministry of Health were very much interested in this subject and had shown great sympathy towards any possible solution of the difficulty of maternal mortality. Amid all the proposals to deal with that grave problem the provision of adequate midwifery was absolutely essential. It was true that in considering this matter the Royal Commission pointed out that it ought to be linked up with some national scheme, especially in relation to local authorities. He would be prepared to delete the words "or medical practitioner," and he would be glad if the Government would agree to that.

Sir KINGSLEY WOOD: No, I think we had better await the report of the expert committee.

The amendment was negatived.

Lieut.-Colonel FREMANTLE moved to include in the list of additional benefits medical treatment or attendance for any person dependent upon the labour of a member.

Sir KINGSLEY WOOD said that it would be absolutely impossible for approved societies to-day to attempt to give by way of additional benefits medical attendance to the dependents of insured persons.

Dr. SHIELS said that the object of the amendment would be served if it pointed out once again that this was not really a National Health Insurance scheme at all: it left out the dependents of the insured person and established unequal health standards in the community.

The amendment was negatived.

Dr. VERNON DAVIES moved an amendment to include in the schedule of additional benefits payments to women in the last weeks of pregnancy who had to leave their employment on account of that condition.

Mr. CHAMBERLAIN said that the amendment was very vaguely worded and he could not recommend the committee to accept it.

On a division 17 voted for the amendment and 17 against. The Chairman gave his casting vote against the amendment, which was accordingly rejected.

The Committee stage was concluded and the Bill as amended was ordered to be reported to the House.

MINISTRY OF HEALTH VOTE.

On Tuesday, May 15th, the House of Commons went into Committee of Supply on a vote of £13,774,025 for the salaries and expenses of the Ministry of Health. Mr. JAMES HOPE, Chairman of Committees, was in the chair.

In the course of the discussion which followed the speech of Mr. CHAMBERLAIN, Minister of Health, reported in last week's issue of THE LANCET (p. 1048),

Mr. BRIANT said he could not share the optimism of the Minister in regard to

The Housing Problem.

At present there were 3,000,000 people living in overcrowded and insanitary conditions, and the present rate of progress was too moderate; facts were not faced. They had to support hundreds and thousands of men and women because they were broken down owing to bad housing conditions, and money spent would be economy.

Mr. A. GREENWOOD said that in so far as the Minister of Health was making new and special efforts to deal with maternal mortality, rheumatism, and other great problems of public health, he would have the support of the Labour Party. The solution of the difficult slum problem depended in the first instance on an increasing supply of new houses. The housing functions of the Ministry of Health were becoming mechanised and old fervour was being dissipated. A jog-trot production would not sufficiently deal with the whole housing situation. In reference to the administration of the poor-law, instead of looking forward the Minister was looking backward to 1834 and trying to drive boards of guardians into a perfectly inhuman administration of the poor-law system. When the Minister was speaking about maternal mortality and the horrors of the slums, he was pitying the very people who were being dealt with so harshly to-day under the present methods of administering the poor-law and the treatment of the unemployed.

Lord H. CAVENDISH-BENTINCK entered a protest against the policy of reconditioning. Many of the houses which it was proposed to recondition ought to be pulled down. He wished to plead for concerted action on behalf of the enormous army of casuals in this country. The Metropolitan Asylums Board was showing the way to a more intelligent policy in regard to the classification of applicants for relief. The Ministry of Health, either by law or by persuasion, should get statutory committees appointed in every county all over the country so that there might be a coördinated policy with regard to the people who drifted from one place to another.

Mrs. RUNCIMAN said that in one of the big industrial towns recently the medical officer of health reported that in the case of 1000 confinements in the district in only 284 cases was a separate room available. In 12 cases four other persons had to share the same room, and in another case five, while in yet another case even eight persons had no other accommodation. Over 400 of these houses were shared by two or more families.

Lieut.-Colonel FREMANTLE said he thought rather an exaggerated idea was being given of the lack of houses that still remained. On the figures of the two censuses of 1911 and 1921 there was a definite shortage in 1921 of 304,000 houses in England and Wales. Since then it had been reckoned that allowing one house per family they required an increase every year of, roughly, 72,000 houses. Taking into account the necessary replacements of old houses, the actual requirements every year were about 120,000 houses, and that was a generous estimate. At the rate of 120,000 since 1921 that meant that they had a further need of 840,000 houses in England and Wales. If they added to that the shortage in 1921 census of 304,000 it meant that at the present moment they had a shortage of 1,144,450 houses against the number of houses that had been built. The number of houses built since the Armistice was over 1,100,000; in other words, their shortage was actually, on the 1911 basis, only about 40,000 houses. They were making up that shortage slowly. In the greater part of England they would have reached by the middle of next year, if not by the end of this year, a position which would be above the basis of the 1911 census. What they wanted was a comprehensive scheme dealing with slum clearance by means of new legislation, but he did not think the overcrowding was getting worse.

Compulsory Vaccination.

Mr. GEORGE THORNE said that the whole House would be with the Government in whatever movement they could make, and in whatever money they proposed to spend, to get rid of slum dwellings and to give the children of the country a better chance.

Dr. WATTS thought that the time was fast approaching when the Ministry should be reorganised. It should have taken from it services such as housing, rent restriction, rating and valuation, and the control of boards of guardians, except so far as that control related to medical attendance on poor people. Most of these duties, for example, he thought, might be transferred to the Home Office, while the Ministry of Health might take over from that office the medical service in connexion with the Factory Acts. He went on to criticise the expenditure incurred upon tuberculosis sanatoria with incommensurate results, and to speak of the difficult position in regard to vaccination. He said that he did not complain of conscientious objection and he was not suggesting that that provision should be done away with,

though personally he thought it should. But for some time past a great number of people had not only not had their children vaccinated, but they had not taken the trouble to make a conscientious objection. The result was that the law in that respect was practically a dead letter.

Mr. GROVES: Thank goodness!

Dr. WATTS said that Mr. Groves might say that, but he had probably never experienced an epidemic of small-pox. If such an epidemic broke out in his neighbourhood probably the first thing he would do would be to rush off to be vaccinated.

Hon. Members: No.

Dr. WATTS said he had known conscientious objectors who had willingly submitted to having a child vaccinated rather than that the child should be prevented from going to America. He wanted to point this out to the Minister in the hope that something might be done, because those who knew small-pox, and were acquainted with its history, realised that previous epidemics had always been preceded by sporadic outbreaks of a wild character; after a number of which a virulent epidemic had suddenly burst forth, carrying away thousands of people and crippling and blinding thousands of others.

Mr. GROVES: Does the hon. Member know that they have abolished it in Holland?

Dr. WATTS said that Holland carried out vaccination more efficiently than we did in this country, and quoted Brazil as an example of a country where vaccination was rigidly insisted upon. He hoped the Government would give the Committee some assurance that they intended in the future to carry out both in the letter and the spirit the present Vaccination Act.

The Case of Mary Race.

Mr. LAWSON raised the case of a child named Mary Race who had died in a diphtheria hospital in circumstances which he had stated to the Minister of Health necessitated a public inquiry. He had received a letter from the Minister in the course of which he said that there was no reason to believe that the child's death was brought about or accelerated by lack of nourishment, but he suggested that the officer of the Ministry had made only a perfunctory inquiry and did not interview a deputation which had been appointed.

Dr. VERNON DAVIES said that Mr. Lawson had presented a one-sided tale. The child was in hospital for six days before she died, and probably had received the serum and presumably had had a certain amount of nourishment during the six days. It was a very serious statement to make in the House that the Minister of Health was prepared to send a responsible medical officer to make an inquiry into a case and that the medical officer had practically perjured himself for the purpose of bolstering up the Ministry of Health. The Committee should not forget that the deputation consisted of people who were ex-guardians who had been turned out of their job for maladministration, and that therefore they were not particularly well disposed towards the Ministry of Health. Speaking of the Minister's speech upon the vote, Dr. Davies said that the whole Committee would recognise that the Minister could only cover a small part of the ground for which he was responsible, and there were one or two points to which he (Dr. Davies) would like to refer.

Cancer.

The Minister of Health had spoken about cancer and the progress that had been made in the ancillary treatment of that disease, referring particularly to radium treatment, seeming to give the impression that the Ministry was anxious to help the radiologists to deal with cancer and that they were very hopeful regarding the results. He (Dr. Davies) wanted to impress upon the Committee and upon the country that the only safe thing for cancer was early and complete operation. Unfortunately it occasionally happened that they got cases which were late and inoperable and then perhaps radium treatment might prolong the life of the patient, or perhaps give him a little more ease; but whatever they did they should not get into their heads the idea that radium would cure cancer; it could not do it at the present time. It was only a help, and he was afraid that the rather hopeful tone of the Minister of Health might create a wrong impression in the country and prevent some of those poor people from seeking medical advice in the early stages when something could be done. He was glad that the Minister had dealt with the question of rheumatism, but all who had read the address of the Chief Medical Officer of the Ministry of Health at the recent conference at Bath [1] would have gathered that the Ministry itself was not acting on the advice given by its well-informed medical department. The Minister said that there were 400 to 500 beds in the country earmarked for the treatment of rheumatism in children. That number was almost ludicrous when they realised the number of the sufferers and that with young children the large majority who got rheumatic fever or acute rheumatism developed heart disease.

Maternal Mortality: The Milk-supply.

Turning to the question of maternal mortality Dr. Davies said that the Minister was fully alive to the importance of that subject, but he was not sure that they were using the material which they had at hand to the best advantage. They heard of a shortage of midwives, but it must be borne in mind that the midwife's life was a hard and difficult one and poorly paid. Yet he had known many cases where midwives who were thoroughly trained could not get a sufficient amount of work for the reason that the better-class patients now went to nursing homes and the poorer-class patients went to poor-law hospitals. That was a point which the Minister would have to bear in mind, especially if he was going to increase the number of midwives. Another question which he wished to bring before the Committee was that of milk. A great campaign was going on in the country by which everyone was advised to drink more milk. People were being reminded that milk was a perfect food, that it was rich in vitamins, and that it was the only suitable nourishment for young children or suckling babies; it was also a very useful food for adults and they were doing all they could to see that this country produced good pure milk at a cheap price. This food was so valuable that it had been called one of the "protective" foods, the other being green vegetables, because it did not matter how unsuitable or peculiar the diet of an individual might be provided he included milk and green vegetables in his diet he would not go far wrong. The use of milk as a food was limited to some extent by its price. As a rule ordinary pure milk was too expensive for people living in very poor districts, and they had tinned or condensed milk of which such a large quantity was imported into this country, and the Minister of Health was perfectly satisfied that he was doing his duty to the babies of the country by labelling that milk "unfit for babies," though he knew very well that it was given to babies solely on account of its cheapness. It was essential that the Minister should see that the campaign for the production of pure and cheap milk should be brought to a successful conclusion. Unfortunately milk was very readily adulterated. The report of the Ministry on this subject had been drawn up carelessly. In the figures of percentages mistakes were by no means uncommon. The Committee would be surprised to learn that an examination of the records of the last three years showed that in 50 per cent. of the counties of England there was adulteration in more than 10 per cent. of the samples of milk examined in 1925. In Wales there was adulteration in 69·2 per cent. of the samples. It was a disgrace that there should be in the Ministry of Health a record showing that in one county in Wales 100 per cent. of the samples of milk examined were adulterated and that in the succeeding year not a single sample should have been analysed and that an explanation of this state of affairs should be forthcoming. The administration of the Act dealing with adulteration operated in such a way as to save the purchasers' pockets and was not regarded from the point of view of health. That was a great mistake. The administration of the Sale of Food and Drugs Act with regard to foodstuffs and milk should be taken out of the hands of the police and put into the hands of the local health authority. He urged that the Minister of Health should pay special attention next year to the defects which undoubtedly had existed in the administration of this Act in order to see if he could not get for the poor people a good, clean, healthy, and unadulterated milk-supply.

Birth Control.

Sir BASIL PETO said that there was no question that unreasonably frequent births under miserable conditions must be a contributory cause of maternal mortality. Deaths due to attempted abortion was also a material contributory cause of that mortality. He believed that there was another question which had a very close bearing on it, and that was the prevalence of venereal disease. On the main question of the undue frequency of births, he took to the Minister in July, 1925, a deputation of Members of the House of Commons to ask that the very restrictive regulations with regard to welfare centres and antenatal centres should be relaxed, their object being that the medical officer in charge should have unfettered discretion to give or to withhold, according to the medical condition of the case before him, information with regard to birth control. Within a couple of days the Minister told him that he proposed to modify the Regulations and gave him a copy. The second part of the formula as it now read was as follows:—

"It is not the function of an antenatal centre to give advice in regard to birth control, and exceptional cases where the avoidance of pregnancy seems desirable on medical grounds should be referred for particular advice to a private practitioner or a hospital."

[1] THE LANCET, May 12th, p. 981.

That was, then, to be altered in this way:—

"Where, however, in any particular case the avoidance of future pregnancy seems desirable on medical grounds, it is open to the medical officer of the centre, if he or she thinks it necessary, to explain to the mother how and where the appropriate information or advice can be obtained."

He (Sir B. Peto) did not, nor did the other hon. Members who were interested in the question, regard that as satisfactory. He could not see why, if it was left to the discretion of the medical officer, male or female, to deal with such a question, he should be instructed practically to withhold the advice, but to send the patient somewhere else to a wholly unsuitable place—namely, one of the general hospitals or to a special medical adviser, which in the case of a poor woman was really derisory advice, and advice which she could not follow. No alteration whatever was made in the regulations. In April, 1926, the question was raised in the House of Lords by Lord Buckmaster, and the resolution then moved was passed in spite of the opposition of the Government by 57 votes to 44. He hoped that the Government would not tell the Committee that there was no restraint put upon these doctors, for it was clearly understood that if the doctors sent their patients to get information elsewhere there was a great risk of the Government assistance to these clinics being withheld. Passing to venereal disease, he said that the Ministry of Health confined itself to dealing with the disease after it had taken hold, and refused to apply any preventive measures or allow the civil population access to preventive measures. In both the Army and Navy admirable results had followed from preventive measures. He wanted to know whether the Minister could say now, as was said by the Minister in 1925, in answer to a deputation of the combined societies—the Social Hygiene Council and the Society for the Prevention of Venereal Disease—that the recommendation of the report, now six years old, should be given effect to. He (Sir B. Peto) urged that it was not reasonable or right to allow the policy of the Ministry of Health to be governed purely by the opinion of one religious sect or another.

Mr. PETHICK-LAWRENCE asked what steps the Government had taken already to classify the maternity death-rate. The question of birth control was a difficult and delicate one. But he was convinced that they could not found morality upon ignorance. Any attempt to do so in the twentieth century was foredoomed to failure. Women belonging to one class already had that knowledge, and he was quite certain that if the information was not given to women scientifically and reverently by those who were the officers of the State they would obtain it in other ways less correct, and very likely much more injurious. When that undesirable form of information had been disseminated among women it would be very difficult to eradicate it. The Ministry of Health would be making a grave mistake if they did not see that the time had come to reconsider their original decision.

Mr. BLUNDELL said that there was not the slightest shadow of evidence that the failure of maternal mortality figures to diminish had been due to the failure of the maternity and child welfare clinics to give information about birth control. He wondered if the supporters of birth control had read the report of the medical officer of health for Birmingham for 1926. If they had done so, although that gentleman was himself a professed advocate of birth control, he (Mr. Blundell) thought that they would get information there which would cause them to have doubts before they advocated the teaching of these practices in public clinics.

Sir Kingsley Wood's Reply.

Sir KINGSLEY WOOD (Parliamentary Secretary to the Ministry of Health), replying to the debate, said that he had some sympathy with the speech of Dr. Watts, and he felt that there was a good deal in what that hon. Member had said. He would point out that the total cost of poor-law administration in money and kind for last year was over £15,000,000 as compared with £5,750,000 in 1921. In the administration of such a large sum of money due care had been exercised and at the same time justice and fairness had been done to the people concerned. He was surprised that Mr. Lawson, who had held a ministerial position himself, should have thought fit to make such an attack on the bona fides and honesty of one of the inspectors of the Ministry of Health. That officer, and he believed the whole of the people concerned in the case which Mr. Lawson had raised, had no other wish than to ascertain the truth and report correctly and honestly to the Minister of Health. If Mr. Lawson would consult any medical Member of the House he would be told that no question of under-nourishment affected either the disease of diphtheria or the unfortunate death of the child which followed. Inquiries had been made since the matter was raised of both the father and aunt of the child, and it appeared that she was perfectly well nourished, and up to the day of the onset of her illness the relieving officer himself stated that he had never noticed any signs of malnutrition in any of the children of this family, while a medical practitioner of long experience who had known the child since birth was satisfied when he saw her on a material date that there was no sign of anything of the kind. The Ministry of Health were fully satisfied that there was no foundation for the allegations. The matter raised by Sir B. Peto was a highly controversial and difficult one. The Minister of Health and his Department took the view that the present formula that was directed to the conduct of the maternity centres should be maintained. They would maintain that formula until the House of Commons came to a contrary decision. It would be a great pity if the excellent work of these centres, numbering over 2000, which were attended by about a third of the mothers who gave birth to children, were involved in a controversy of this kind. In regard to the speeches made in the debate on the question of housing he (Sir K. Wood) thought if one could not be optimistic about what had been done in relation to housing in this country one must be a very pessimistic person indeed. While the Ministry felt that the corner had been turned in regard to housing they did not consider that their work in that matter had ceased. They intended to go on with the housing programme and continue the considerable work which was being done by local authorities in regard to the repair of houses.

HOUSE OF COMMONS.

TUESDAY, MAY 22ND.

Voluntary Hospitals and Motor Accidents.

Mr. LUNN asked the Minister of Health whether, in view of the great increase in cases caused by motor accidents which had to be dealt with by the hospitals, he would take steps to call a conference between representatives of the voluntary hospitals, insurance companies, and other organisations concerned, for the purpose of drafting a scheme to cover the expenses of the treatment of cases caused by motor accidents.—Sir KINGSLEY WOOD replied: My right hon. friend must receive and consider the forthcoming final report of the Voluntary Hospitals Commission before deciding whether to take action on the lines which the hon. Member suggests. (In reply to a previous question it was stated that the report would be issued this month.)

The Services.

ROYAL NAVAL MEDICAL SERVICE.

A. R. Ewart and M. Clifford to be Surg. Lts.

Surg. Comdrs: C. M. R. Thatcher to Greenwich, in continuation, and as Naval Health Officer and Medical Transport; F. C. Hunot to *Victory XI.*, for R.N. Hospl., Portland; and G. D. Fergusson to *Maine;* J. S. Orwin to *Royal Sovereign* (on recommg.); and G. E. D. Ellis to *Victory XI.*, for Portland Dockyard.

Surg. Lt.-Comdrs: A. B. Grant to *Cambrian*, and J. E. Clarke to *President*, addl., for three months' post-graduate course.

ROYAL ARMY MEDICAL CORPS.

Maj. (Temp. Lt.-Col.) B. Biggar from the Secd. List is restd. to the estabt. and relinquishes the temp. rank of Lt.-Col.

Capts. D. H. Coats, G. T. Garraway, and P. G. Russell to be Majs.

A. MacMillan to be Lt. on prob.

ARMY DENTAL CORPS.

The undermentioned Lts. to be Capts.: F. F. Anslow and W. B. Purnell.

RESERVE OF OFFICERS.

Lt.-Col. R. McK. Skinner, having attained the age-limit of liability to recall, ceases to belong to the Res. of Offs.

SUPPLEMENTARY RESERVE OF OFFICERS.

B. R. Crossley to be Lt.

TERRITORIAL ARMY.

Maj. F. R. Harris, having attained the age-limit relinquishes his commission.

Maj. A. Morris, having attained the age-limit, retires, and retains his rank with permission to wear the prescribed uniform.

ROYAL AIR FORCE.

The undermentioned are granted permanent commissions in the ranks stated: Flight Lts. F. B. C. Lindesay, B. Crawford, and R. G. Freeman.

Flight Lt. T. Sheehan relinquishes his temporary commission on completion of service and is permitted to retain his rank.

Medical News.

UNIVERSITY OF LONDON.—At a meeting of the Senate held on May 16th, with Sir William Beveridge, the Vice-Chancellor, in the chair, Dr. Geoffrey Hadfield was appointed as from May 1st to the University Chair of Pathology tenable at the London School of Medicine for Women.

Dr. Hadfield received his medical education at St. Bartholomew's Hospital, where he was Harvey Prizeman in Physiology and Junior Scholar in Anatomy and Biology in 1908. He graduated in 1911, and proceeded to the M.D. degree (Pathology) two years later, being awarded the University Gold Medal. After resident appointments at St. Bartholomew's Hospital and at the Metropolitan Hospital, he was for a time medical registrar to the Dreadnought Hospital, Greenwich. He served in the Royal Army Medical Corps from 1914–19, since when he has been, respectively, recognised teacher, demonstrator, and assistant internal examiner in the Pathological Department of the University of Bristol. During this time he has been Pathologist, Bacteriologist, and Clinical Pathologist to the Bristol General Hospital, and since 1922 he has also been consulting Pathologist to the Bristol Mental Hospital, and other institutions.

Mr. Percival Hartley, D.Sc., was appointed as from August 1st, 1929, to the University Chair of Biochemistry tenable at the London School of Hygiene and Tropical Medicine.

Educated at the Technical College, Bradford, and the Yorkshire College, Leeds, Dr. Hartley obtained the B.Sc. degree of the Victoria University, Manchester, with first-class honours in chemistry in 1904. After research work at the University of Oxford, and at the Lister Institute, where he held a Grocers' Company research scholarship, he became D.Sc. Lond. in 1909. For the next four years he was physiological chemist to the Imperial Bacteriological Laboratory at Muktesar, United Provinces, India, and in 1913 he was appointed first assistant to the head of the Biochemical Department at the Lister Institute. From 1915–19 he was on war service with the R.A.M.C. in France and Belgium; from 1919–21 he was head of the Biochemical Department, the Wellcome Physiological Research Laboratories, and since 1922 he has been on the staff of the National Institute for Medical Research, Hampstead. In 1927 he held the William Julius Mickle Fellowship, and was appointed honorary secretary of the Medical Research Club.

The title of Professor of Experimental Pathology in the University was conferred on Dr. Archibald Leitch in respect of the post held by him at the Cancer Hospital.

From 1906–08 Dr. Leitch was assistant director of Middlesex Hospital Cancer Research Laboratory, and from 1908–12 director of the Caird Cancer Laboratory, Dundee. He was also Research Fellow at St. Andrews University from 1909–12. From 1912–20, except when on war service, he was pathologist to the Cancer Hospital, and since then he has been director of the Research Institute at that hospital.

The title of Reader in Pathological Chemistry in the University was conferred on Mr. C. R. Harington, Ph.D., in respect of the post held by him at University College Hospital Medical School.

From 1919–20 Dr. Harington was part-time demonstrator in Medical Chemistry in the University of Edinburgh, and from 1920–22 research assistant in the department of therapeutics. Since 1922 he has been lecturer in Pathological Chemistry at University College Hospital.

The Dunn Exhibitions in Anatomy and Physiology for 1928 were awarded to Mr. J. D. H. Bird, an internal student, of King's College.

ROYAL COLLEGE OF SURGEONS, EDINBURGH.—At a meeting of the College, held on May 18th, Mr. Alexander Miles, the President, in the chair, the following 25 successful candidates, out of 84 entered, who passed the requisite examinations between Jan. 2nd and 7th, were admitted Fellows:—

Elsie V. Crowe, Alexander Cumming, F. W. Duthie, Philip Carson, Bernard Gluck, C. D. Gossage, Clermont Grantham-Hill, G. A. Hardwicke, Alfred Hobson, L. Wynn Houghton, C. W. Isaac, J. R. Learmonth, F. I. Lewis, E. O. Lloyd, Beatrice H. Lynn, C. R. McCash, B. L. McFarland, Samuel McMahon, E. C. Mekie, F. G. Phillips-Turner, F. E. Stayner, S. M. Vassallo, G. I. Wilson, C. L. Walker, and J. F. Zohrab.

The Higher Dental Diploma was conferred on Norman Gray and T. W. Watts.

The Bathgate Memorial Prize was awarded, after a competitive examination in Materia Medica, to J. I. Meikle.

THE decoration of Chevalier of the Legion of Honour has been conferred by the French Government on Mr. F. J. Morrin, surgeon to Jervis-street Hospital, Dublin. Mr. Morrin is medical adviser to the French Consultate in Dublin. Last year, while in France, he was involved in a railway accident at Abbeville, and rendered assistance to the injured. He was formerly head of the medical service of the National Army of the Irish Free State.

UNIVERSITY OF EDINBURGH.—Dr. F. A. E. Crew has been appointed to the new Buchanan Chair of Animal Genetics.

METROPOLITAN ASYLUMS BOARD.—Lord Doneraile was appointed chairman, and Mr. George Brittain vice-chairman, at a meeting of the Board on May 19th.

Sir StClair Thomson has been elected a corresponding member of the Société de Laryngologie des Hôpitaux de Paris, of the American Stomatological Association, and of the Philadelphia Laryngological Society.

THE SAMUEL AUGUSTINE COURTAULD INSTITUTE OF BIOCHEMISTRY at the Middlesex Hospital Medical School will be opened on June 14th, 1928, at 3.30 P.M. Sir Archibald Garrod will give an address.

RESEARCH DEFENCE SOCIETY.—The annual general meeting of this society will be held at 11, Chandos-street, Cavendish-square, London, W., at 3 P.M. on Tuesday, June 19th. The Stephen Paget Memorial Lecture will be delivered by Sir Bernard Spilsbury, whose subject will be the Work and Responsibilities of a Pathologist.

NATIONAL ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS.—The fourteenth annual conference will be held in the Great Hall of the British Medical Association House in Tavistock-square on Monday and Tuesday, Oct. 15th and 16th. The subjects for discussion are the Occurrence of Tuberculosis among Primitive People, and the Principles Underlying a Scheme of Antituberculosis Measures in any Country.

WILLIAM MACKENZIE MEMORIAL MEDAL.—The first award of this medal, given in recognition of valuable contributions to ophthalmology, will be made to Dr. A. Maitland Ramsay, honorary director of the James Mackenzie Institute for Clinical Research, St. Andrews, and consulting ophthalmic surgeon to Glasgow Royal Infirmary. The presentation will take place in Glasgow, in the autumn, when Dr. Ramsay will deliver an address.

THE FOUNDLING SITE.—The court of governors of the Hospital for Sick Children in Great Ormond-street has approved the proposal for rebuilding it on the site of the Foundling Hospital should the site be obtainable. Mr. Stanley Hall, F.R.I.B.A., the architect consulted, reported that rebuilding was imperative and urgent, and that to reconstruct the hospital on the present site would be attended with "grave disadvantages as regards air, light, and health conditions generally."

ROYAL COLLEGE OF SURGEONS IN IRELAND.—The annual dinner was held in the Hall of the College last Saturday evening, Mr. Andrew Fullerton, President, in the chair. There was a large assembly of Fellows and guests. In proposing the health of the Governor-General, the President expressed the regret of the College at his absence from the dinner, and its hopes for his speedy restoration to health. He then gave the toast "Prosperity to Ireland," and spoke of the contribution toward that prosperity that could be made by the surgical profession. Replies were made by Lord Glenavy, Chairman of the Senate of the Irish Free State, and by Mr. R. J. Johnstone, a Member of the Parliament of Northern Ireland. Other speakers were Sir F. Conway Dwyer, Dr. R. W. Leslie, Sir John Moore, and Mr. James McMahon. At the end of the dinner Lord Glenavy, on behalf of the Council of the College, presented the President with a silver salver in recognition of his services to the College.—The annual elections in the College take place in the first week of June. Mr. T. E. Gordon, the present Vice-President, is the only candidate for the Presidency, and Mr. R. A. Stoney is a candidate for the Vice-Presidency.

REDUCTION OF NEONATAL MORTALITY.—The National Baby Week Council states that in 1926, in England and Wales, 48,757 children died in the first year of life, and that 45 per cent. of these deaths occurred in the first 28 days. The Council has recently received statistics from English towns in connexion with an offer of prizes by the *Daily News* for the greatest reduction in the neonatal death-rate during 1927, as compared with the previous five years' average. In the group of towns with a population of 100,000 and upwards, Leyton reduced its neonatal death-rate to 18·07 per 1000, a reduction of 35 per cent. on the previous five years; Bethnal Green to 19·97, a reduction of 26 per cent.; and Shoreditch to 23·31, a reduction of 20 per cent. Among the towns with a population of 50,000 to 100,000 Finchley reduced its neonatal death-rate to 12·7, Bath to 20·9, and Carlisle to 24·1, the reductions being 53, 36, and 33 per cent. respectively. The prize offered to the district which showed the greatest number of new-born lives saved goes to Lambeth, with Middlesbrough and Salford next in order.

MEMORIAL TO SIR WILLIAM LEISHMAN.—As we have already announced, a memorial tablet to the late Sir William Leishman, F.R.S., will be unveiled in the chapel of the Queen Alexandra Military Hospital, Millbank, S.W., at 11.30 A.M., on Saturday, June 2nd.

THE HIGHLANDS AND ISLANDS MEDICAL SERVICE. Major Walter Elliot, M.P., Under Secretary of State for Scotland, has opened the enlarged and modernised Stornoway Hospital and the extended Lewis Sanatorium. Major Elliot referred to the fact that in the Island of Lewis the number of cases of tuberculosis is proportionally three times as high as on the mainland.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL.—It was reported at the annual meeting of governors that the number of beds had grown from 87 in 1907 to 309 in 1927, the in-patients from 469 to 1716, and the out-patients' attendances from 9806 to 79,422. Over £108,000 has been collected towards the £125,000 required to complete the extensions in Great Portland-street and at the country branch at Stanmore.

UNIVERSITY OF LONDON ANIMAL WELFARE SOCIETY. Prof. F. T. G. Hobday, principal of the Royal Veterinary College, will take the chair at a public meeting to be held at King's College, Strand, at 5.30 P.M., on Thursday, May 31st, when addresses will be given on Man's Duty to Animals. Admission will be free without ticket. The society is precluded by its constitution from engaging in controversies relating to scientific experiments on animals.

BRITISH ASSOCIATION.—The preliminary programme of the annual meeting of the British Association for the Advancement of Science, which will be held this year at Glasgow, has now been issued. On Sept. 5th Sir William Bragg, F.R.S., who will be President of the Association in succession to Sir Arthur Keith, F.R.S., will deliver an address on Modern Developments of the Physical Sciences and Their Relation to National Problems. Sectional meetings will be held daily from Sept 6th to 12th, except on Saturday and Sunday. The Presidents of the Physiological and Psychological Sections are Prof. C. Lovatt Evans, F.R.S., and Prof. T. H. Pear. A detailed programme may be had from the secretary of the British Association, Burlington House, London, W. 1.

BRACEBOROUGH SPA.—This spa, which has a history of 100 years, was reopened on Saturday last, May 19th, by the Earl of Ancaster in the presence of a large company, medical and lay, who were entertained later at luncheon by the Mayor and Corporation of Stamford and the directors of the company responsible for carrying on the work of the development of the spa. The waters of Braceborough Spa were first recommended to George III. by Dr. Francis Willis, who resided at Braceborough. The king, who suffered at this time from a skin affection, bathed at Braceborough, it is said, with favourable results; the site of the bath in which he bathed has been preserved, and on it there have been erected now a small pump room and baths. It has been estimated that the amount of water available from the springs daily is 200,000 gallons, and, according to Dr. Alfred Eddowes, consulting physician, St. John's Hospital for Diseases of the Skin, it has now been found successful in the treatment of many of the conditions amenable to balneology, especially psoriasis. At the civic luncheon Dr. Harold Pritchard, senior physician to the West London Hospital, spoke warmly of the development of spa treatment and its value to the public.

THE LATE MR. W. J. FOSTER.—The death occurred at Boscombe on May 11th of Mr. William James Foster, consulting surgeon to the Royal Berkshire Hospital. He qualified in 1890 and became F.R.C.S. Eng. two years later, after holding a number of house appointments at St. Mary's Hospital, where he had received his medical training. In 1893 he went to Reading as successor to the late Dr. Richardson, and in 1899 he was appointed assistant surgeon to the Royal Berkshire Hospital, becoming full surgeon in 1914. During the war he was in charge of one of the main surgical blocks of the Reading War Hospital, with a captain's commission in the R.A.M.C. (T.). A pioneer in radiographic work in Reading, he had much to do with developing the X ray department at the Royal Berkshire Hospital, and his opinion as a radiologist was especially valued by his colleagues, as it was backed by expert surgical opinion. Mr. Foster kept himself well abreast of advancements in surgery and, besides his professional work, took a keen interest in the management of the hospital, of which he was senior surgeon at the time of his retirement in 1924. On leaving Reading he settled in the Bournemouth district and ultimately built a house at Boscombe. He leaves a widow and one daughter.

TRAINING AND EMPLOYMENT OF MIDWIVES.—The Minister of Health has appointed a Departmental Committee, whose terms of reference are: "To consider the working of the Midwives Acts, 1902 to 1926, with particular reference to the training of midwives (including its relation to the education of medical students in midwifery), and the conditions under which midwives are employed." The Committee is appointed with the concurrence of the Central Midwives Board, and its appointment forms part of the measures for dealing with the problem of maternal mortality and morbidity. The members are: Sir Robert Bolam, F.R.C.P. (chairman), Dr. J. W. Bone, Dame Janet Campbell, M.D., Lady Cynthia Colville, Dr. W. A. Daley, Dr. J. S. Fairbairn, Dr. T. Eustace Hill, Miss Alice Gregory, Mr. A. B. Maclachlan, Dr. F. N. Kay Menzies, Mrs. Bruce Richmond, and Miss Stephenson. The secretary will be Mr. W. H. Howes, of the Ministry of Health, to whom communications may be addressed.

GIFT TO A CHILDREN'S HOSPITAL.—Sir Gomer Berry, chairman of the committee of management of the Infants Hospital, Vincent-square, London, has given £50,000 to the hospital as a memorial to his wife. It will be used for the erection of a new maternity block.

Medical Diary.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

THURSDAY, May 31st.—10 A.M. to 12.30 P.M., LARYNGOLOGY AND OTOLOGY. Summer Meeting. *Papers:* Mr. Rake: Achalasia and Degeneration of Auerbach's Plexus. Mr. A. J. Wright: Silent Tracheotomy, Its Significance. Dr. Lowndes Yates: Methods of Estimating the Liability to Post-operative Hæmorrhage from Unsutured Wounds. Mr. W. M. Mollison: Dysphagia Due to Pharyngeal Paralysis. 2.30 P.M. to 4.30 P.M. *Papers:* Dr. Jobson Horne: Cancer of the Vocal Cords. Dr. Watson-Williams: Familial Infectivity of Chronic Sinusitis. Sir StClair Thomson: Intrinsic Cancer of the Larynx Operated Through a Laryngofissure. (Lantern demonstration of immediate and lasting results in 70 cases.)

FRIDAY, June 1st.—10.30 A.M. to 12.30 P.M., LARYNGOLOGY AND OTOLOGY. *Papers:* Prof. Dr. Otto Mayer, of Vienna (Dalby Prize Winner): The Pathology of Otosclerosis. Dr. A. Lowndes Yates: A Working Hypothesis for Research in Otosclerosis. Mr. Harold Kisch: The Use of Temporal Muscle Grafts in the Radical Mastoid Operation. Mr. Douglas Guthrie: Fat Grafting in Mastoid Surgery. 4 P.M. to 6.30 P.M. *Cases and Specimens* will be shown by Mr. E. D. D. Davis, Mr. Alexander Tweedie, Mr. Douglas Guthrie, Dr. T. B. Jobson, Sir James Dundas-Grant, Mr. Harold Kisch, Mr. M. Vlasto, Mr. Herbert Tilley, Mr. V. E. Negus, Mr. Norman Patterson, Mr. J. A. Gibb, and Mr. Broughton Barnes. The Library will be open until 10 P.M. *Dinner:* Members will dine together, at the Hotel Victoria, at 7.45 P.M. The Dinner (to which ladies are invited) will be followed by a dance.

SATURDAY.—10.30 A.M. (Cases at 9.30 A.M.) LARYNGOLOGY AND OTOLOGY. *Papers:* Prof. G. Portmann (Bordeaux): Vasomotor Affections of the Internal Ear. Mr. W. S. Sharpe: The Influenza Ear. *Cases and Specimens* will be shown by Dr. T. A. Clarke (introduced by Mr. Cleminson), Dr. T. B. Jobson, Sir James Dundas-Grant, Mr. Harold Kisch, Mr. W. Ibbotson, Mr. T. B. Layton, Dr. O. Popper, Dr. Dan MacKenzie, and Mr. Norman Barnett. There will be a display of instruments and apparatus in Rooms 3 and 4 during the period of the summer meeting.

MEDICAL SOCIETY FOR THE STUDY OF VENEREAL DISEASES, 11, Chandos-street, Cavendish-square, W.

FRIDAY, June 1st.—8.30 P.M., General Meeting. Papers will be read by Dr. L. S. T. Burrell and Dr. S. R. Gloyne on Syphilis in Relation to the Ætiology and Diagnosis of Tuberculosis. A discussion will follow.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE.

WEDNESDAY, May 30th.—5.15 P.M. (at the London School of Hygiene and Tropical Medicine, Endsleigh-gardens, Euston-road), Dr. Joaquin J. Vallerino (Panama): Lantern slide demonstration on the Value of X Ray in Intestinal Amœbiasis.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.

MONDAY, May 28th, to SATURDAY, June 2nd.—ST. PETER'S HOSPITAL, Henrietta-street, Covent Garden, W.C. Clinical urological demonstration by Mr. Ogier Ward, at 2 P.M. on Wed.—ROYAL NORTHERN HOSPITAL, Holloway-road, N. Clinical demonstration by Dr. H. C. Semon from 4.30 to 5.30 P.M. on Thurs. The above are free.—ST. JOHN'S HOSPITAL, Leicester-square, W.C. Post-graduate course in Dermatology every afternoon. NATIONAL HOSPITAL, Queen-square, W.C. Course

in Neurology for two months. Particulars and tickets from the Fellowship of Medicine. Further particulars from the Secretary.

WEST LONDON HOSPITAL POST-GRADUATE COLLEGE, Hammersmith-road, W.
TUESDAY, May 29th.—10 A.M., Medical Registrar: Medical Wards. 2 P.M., Dr. Shaw: Medical Out-patients. 2 P.M., Mr. Hamblen Thomas: Throat, Nose and Ear Department.
WEDNESDAY.—10 A.M., Dr. Burnford: Medical Wards. 2 P.M., Dr. Scott Pinchin: Medical Out-patients. 2.30 P.M., Mr. Donald Armour: Surgical Wards.
THURSDAY.—10 A.M., Dr. Grainger Stewart: Neurological Department. 2 P.M., Mr. Simmonds: Surgical Out-patients. 2 P.M., Mr. MacDonald: Genito-Urinary Department.
FRIDAY, June 1st.—10 A.M., Dr. Pritchard: Medical Wards. 12 noon, Dr. Ironside: Clinical Demonstration. 2 P.M., Mr. Vlasto: Throat, Nose and Ear Department.
SATURDAY.—9.30 A.M., Dr. Burnford: Bacterial Therapy Department. 10 A.M., Dr. Owen: Children's Medical Out-patients.
Daily, 10 A.M. to 5 P.M., SATURDAYS, 10 A.M. to 1 P.M., In-patients, Out-patients, and Special Departments. Anæsthetic and Operative Surgery Courses.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham.
WEDNESDAY, May 30th.—2.30 to 5 P.M., Medical, Skin, and Eye Clinics. Operations.
THURSDAY.—11.30 A.M., Dental Clinics. 2.30 to 5 P.M., Medical, Surgical, and Ear, Nose and Throat Clinics. Operations.
FRIDAY.—10.30 A.M., Throat, Nose and Ear Clinics. 2.30 to 5 P.M., Surgical, Medical, and Children's Diseases Clinics. Operations.

SOUTH-WEST LONDON POST-GRADUATE ASSOCIATION, St. James's Hospital, Ouseley-road, Balham.
THURSDAY, May 31st.—4 P.M., Mr. J. Swift Joly: Practical Points in Urinary Disease.

ST. MARY'S HOSPITAL INSTITUTE OF PATHOLOGY.
THURSDAY, May 31st.—5 P.M., Dr. G. V. Anrep: Pathology of Conditional Reflexes.

NATIONAL HOSPITAL, Queen-square, W.C
TUESDAY, May 29th.—2 P.M., Dr. Walshe: Out-patient Clinic. 3.30 P.M., Dr. Hinds Howell: Subacute Combined Degeneration.
THURSDAY.—3 P.M., Dr. Kinnier Wilson: Out-patient Clinic. 3.30, Dr. Walshe: Neurosyphilis (2).
FRIDAY, June 1st.—2 P.M., Dr. Adie: Out-patient Clinic. 3.30 P.M., Mr. Elmquist: Demonstration of Re-educative Exercises (in Exercise Room).

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, Leicester-square, W.C.
THURSDAY, May 31st.—5 P.M., Dr. W. J. O'Donovan: Skin Diseases of Animals Transmissible to Man.
FRIDAY, June 1st.—5 P.M., Dr. W. Griffith: Bullous Eruptions.

MIDDLESEX HOSPITAL MEDICAL SCHOOL, Cleveland-street, W.
TUESDAY, May 29th, WEDNESDAY, May 30th, and THURSDAY, May 31st.—5.30 P.M, Dr. John Eason: Graves's Disease.

UNIVERSITY OF SHEFFIELD POST-GRADUATE CLINICS.
FRIDAY, June 1st.—3.30 P.M. (at the Royal Hospital), Dr. Mackie: Strabismus.

Appointments.

GERRARD, E. A., M.B., Ch.B. Manch., has been appointed Resident Obstetric Surgeon to St. Mary's Hospitals, Manchester.

GRAHAME, E. W., M.B., Ch.B. Glasg., Second Assistant Medical Officer to the Croydon Board of Guardians.

LEVY, S. I., F.R.C.S. Eng., L.R.C.P. Lond., Assistant Surgeon to the London Jewish Hospital, Stepney Green, E.

SKINNER, T. E., M.R.C.S., Certifying Surgeon under the Factory and Workshop Acts for Wivenhoe.

WILLOUGHBY, W. M., M.D., B.Chir. Camb., D.P.H., Medical Officer of Health, City of London.

Bolingbroke Hospital, Wandsworth: LLOYD, W. E., M.D. Lond., M.R.C.P. Lond., Honorary Physician; and LUMSDEN, A., M.B., Ch.B. Aberd., Out-patients' Officer, Ophthalmic Department.

Leeds Public Dispensary: MCADAM, W., M.D., Ch.B. Glasg., F.R.C.S. Lond., Hon. Physician: and MOIR, P. J., M.B., Ch.B. Glasg., F.R.C.S. Eng., Hon. Surgeon.

Vacancies.

For further information refer to the advertisement columns.

All Saints' Hospital for Genito-Urinary Diseases, Vauxhall Bridge-road, S.W.—Res. Sen. H.S. At rate of £200. Also H.S. At rate of £150.

Belfast, Ulster Hospital for Children and Women.—Hon. P. Also Hon. Asst. P.

Bethnal Green Hospital, London, E.—Asst. M.O. £400.

Birmingham and Midland Eye Hospital, Church-street.—H.S. £110.

Birmingham City Education Committee.—Asst. Sch. M.O. £600.

Burnley, Primrose Bank Institution.—Res. M.O. £300.

Cambridge, Papworth Village Settlement.—Second Asst. M.O. £250.

Cambridge University Pathological Laboratory.—John Lucas Walker Studentship. £300.

Cancer Hospital, Fulham-road, S.W.—H.S. At rate of £100.

Carlisle, Cumberland Infirmary.—Jun. H.S. At rate of £135.

Central London Throat, Nose, and Ear Hospital, Gray's Inn-road, W.C.—Out-patient Statistical Reg.

City of London Hospital for Diseases of Heart and Lungs.—Two H.P.'s. At rate of £100.

Derby, Walton Sanatorium, near Chesterfield.—Locum Res. Asst. M.O. At rate of £350.

Dorchester, Dorset Mental Hospital, Herrison.—Jun. Asst. M.O. £300.

Down County Regional Education Committee.—Sch. M.O. £750.

Eastbourne, Princess Alice Memorial Hospital.—Jun. H.S. At rate of £100.

East London Hospital for Children and Dispensary for Women.—H.P. At rate of £125.

Essex, Administrative County of.—Three Asst. County M.O.H.'s. Each £600.

General Lying-in Hospital, York-road, Lambeth, S.E.—Res. M.O. At rate of £100.

Hastings, Royal East Sussex Hospital.—Hon. Asst. Surg.

Hospital for Sick Children, Great Ormond-street, W.C.—Med. Reg. £250. Also H.P. and H.S. Each £50.

Ipswich, East Suffolk and Ipswich Hospital.—Hon. Asst. Ophth. S.

Leamington Spa, Warneford General Hospital.—Res. H.P. £165.

L.C.C. Mental Hospitals' Service.—Eighth Asst. M.O. £300.

Manchester, Ancoats Hospital.—H.S., Orthopædic. £100.

Manchester City.—M.O. £600.

Manchester Northern Hospital for Women and Children.—Sen. H.S. and Jun. H.S. £130 and £100 respectively.

Manchester Royal Infirmary.—Dickinson Research Travelling Scholarship in Medicine. £300.

Manchester Royal Eye Hospital.—Sen. H.S. £150. Jun. H.S. £120.

Manchester, Salford Royal Hospital.—Hon. Asst. P. Also Cas. H.S. At rate of £125.

Newport, Mon., Royal Gwent Hospital.—Hon. S., two Hon. Asst. S.'s. Also Hon. Asst. Ophth. S.

Nottingham City Mental Hospital.—Deputy Med. Supt. £650.

Plumstead and District Hospital, High-street, S.E.—First Asst. M.O. £400.

Poplar Hospital for Accidents, East India Dock-road, Poplar, E.—Second Res. O. £175.

Pudsey, Borough of.—M.O.H., &c. £273.

Queen Mary's Hospital for the East End, E.—H.P.'s, H.S.'s, &c.

Queen's Hospital for Children, Hackney-road, E.—Cas. O. Also H.S. Each at rate of £100.

Royal College of Physicians of London.—Charles Murchison Scholarship in Clin. Med. 20 guineas.

Royal College of Physicians of London and Royal College of Surgeons, England.—Streatfeild Research Scholarship in Med. and Surg. £250.

Royal Free Hospital, Gray's Inn-road, W.C.—H.S.'s, H.P.'s, &c.

Royal Naval Medical Service.—Surg. Lieutenants. £453.

Royal Northern Hospital, Holloway, N.—Clinical Asst.

St. Mary Abbots Hospital, Marloes-road, W. 8.—Asst. M.O. £250.

St. Mary's Hospital, W.—Surg. Reg. £200.

St. Thomas's Hospital Medical School.—University Chair of Dietetics. £1000.

Stafford, Staffordshire General Infirmary.—H.P. At rate of £150.

Surrey County Sanatorium, Milford.—Med. Supt. £900.

Swansea Hospital.—H.S. £150.

Tunbridge Wells, Tonbridge Union Institution, Pembury.—Asst. M.O., &c. £275.

University of London, South Kensington, S.W.—Sir William Dunn Chair of Pathology. £1330.

Warrington Infirmary and Dispensary.—Jun. H.S. £175.

Weir Hospital, Grove-road, Balham, S.W.—Jun. Res. M.O. £150.

West London Hospital, Hammersmith-road, W.—H.P., H.S., Res. Asst. Cas. O. Also Aural and Ophth. H.S. Each at rate of £100.

Wrexham and East Denbighshire War Memorial Hospital.—Two Res. H.S.'s. Each at rate of £100.

The Chief Inspector of Factories announces a vacancy for a Certifying Factory Surgeon at Salford and Stretford (Lancashire).

Births, Marriages, and Deaths.

BIRTHS.

DULAKE.—On May 18th, at South-walk, Reigate, Surrey, the wife of Lawrence Dulake, M.B., B.S., of a son.

MILLER.—On May 16th, at 514, Fulham Palace-road, S.W. 6, the wife of T. Duff Miller, M.D., F.R.F.P.S., of a son.

DEATHS.

CLARKE.—On May 22nd, 1928, at 3, Chandos-street, Cavendish-square, W., Kate Litton, the dearly loved wife of Ernest Clarke, C.V.O., M.D., F.R.C.S.

HARRIS.—On May 18th, at Beresford-road, Birkenhead, Alfred Charles Edward Harris, M.B., F.R.C.S. Edin., J.P., aged 77 years.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Comments, and Abstracts.

OPENING OF THE PRINCESS LOUISE KENSINGTON HOSPITAL FOR CHILDREN.

THIS new hospital, of which the out-patient department has been in use since last December, was formally opened by the King and Queen on May 21st. Originally founded as a dispensary in 1840, the hospital became the Kensington Dispensary and Children's Hospital in 1896, when a ward of 11 beds was added to the inconvenient building in Church-street, Kensington, where out-patient clinics were held. Largely owing to the energy of Princess Louise, Duchess of Argyll, the old site was sold in 1925 and a new site purchased at the corner of St. Quintin's-avenue, North Kensington.

Good response was received to the appeal for the £80,000 needed to build a modern hospital for children. At the end of 1926 the foundation stone was laid and in 1927 an honorary medical staff of high standing was appointed. Accommodation for between 30 and 40 beds is available in the two ward blocks already erected and it is hoped, when funds permit, to build a nurses' home, so as to release the upper floors for the reception of 40 more cots. Provision for out-patients includes ophthalmic, ear, nose and throat, orthopædics, X ray, electrical treatment, and massage departments. A special arrangement enables beds to be reserved for L.C.C. school-children undergoing the operation for tonsils and adenoids, in order that they may be retained in the hospital for two nights. The hospital is also responsible for providing a school treatment centre for L.C.C. school-children, and for this some financial assistance is received. There is also a special centre for the care and investigation of rheumatism in children. Women out-patients receive medical treatment, but there is no in-patient accommodation for them.

The population of Kensington is approximately 94,000 and a children's hospital has long been needed. The King, when opening the hospital, referred to the close association between the Royal Family and the Kensington Dispensary and praised the prudent and far-sighted policy shown in the selection of the site.

The honorary medical staff of the hospital, some of whom were presented to the King, are as follows:—Consulting physician: Sir William Willcox. Consulting surgeon: Sir Herbert Waterhouse. Physicians: Dr. P. Montague Smith and Dr. Sydney A. Owen. Surgeons: Mr. Neil Sinclair, Mr. R. M. Handfield-Jones, and Mr. Eric Lloyd. Assistant physicians: Dr. Douglas Rice-Oxley, Dr. Janet Aitken, and Dr. R. C. Lightwood. Assistant surgeon: Mr. Robert Paton. Ear, nose, and throat surgeon: Mr. G. Douglas Robertson. Ophthalmic surgeon: Mr. A. E. Loosely. Dermatologist: Dr. Lewes N. Gibbes. Anæsthetists: Dr. Ernest F. Travers, Dr. Aileen Chester, and Mrs. Audrey Marsden. Medical officer in charge of Electrical Department: Dr. J. F. Carter Braine. Radiologist: Dr. H. M. Worth. Dental surgeon: Mr. L. Russell Marsh. Pathologist: Dr. Robert Donaldson.

"TO MOTHERS AND FATHERS."

THE sub-title of this booklet,[1] compiled by the Association of Infant Welfare and Maternity Centres, is "How to Keep Yourselves and Your Children Well and Strong." It is now in a ninth edition, and the publishers state that the sales have approached half a million. This success may be attributed to the soundness of the teaching, the simplicity with which this teaching is presented, and the low price. Though the book is intended as a health guide for parents, they are warned that it cannot replace expert medical advice, and in the very first paragraph the expectant mother is recommended to put herself in the hands of a skilled doctor or midwife, who alone is in a position to judge of the normality or otherwise of her condition. A hopeful attitude is the prevailing tone, and emphasis is laid on the desirability of preventing troubles rather than putting them right when they have developed. The matters treated with gravity are those which should be so treated—miscarriage, complications of pregnancy, artificial feeding, infantile diarrhœa, colds and their sequelæ in children, and the like.

There is a useful explanatory chapter on adenoids, and another on the common infectious diseases. The chapters on management and character training are full of practical wisdom.

[1] Published by the National League for Health, Maternity and Child Welfare. 1928. Pp. 82. 6*d*., post free.

THE ORGANISATION OF HOSPITALS.

To the Editor of THE LANCET.

SIR,—I would be glad to receive some information as regards the general organisation of hospitals in England. The reorganisation of the British hospital at Buenos Aires is under consideration. A point has been raised as to whether the staff of the hospital should or should not be represented on the committee of management. The view of the staff is that each year they should elect a member to represent them on the Committee, so as to establish a point of contact between the two bodies. The view of the Committee is that such is not the custom in British hospitals, and, even if it were, it has no advantage.

I should be much obliged if you could give me some information as to what is the custom in England.

I am, Sir, yours faithfully,

ROBERT E. HALAHAN.

Buenos Aires, April 19th, 1928.

*** There is no rule on this subject. In many English hospitals the medical staff are represented on the management; probably in quite as many they are not. There are advantages in the staff being represented.—ED. L.

NURSERY SCHOOLS.

ON the whole the President of the Board of Education rebutted with considerable success the attacks made last week in the House of Commons on its recent policy, but the lack of nursery schools hardly seems to be receiving sufficient attention from him. Mr. Trevelyan, who in Committee of Supply moved the reduction in the vote for the salaries and expenses of the Board of Education, criticised the large classes in our elementary schools and the unsatisfactory state of many school buildings, but it was to his plea for greater care of the child between the ages of 3 and 6 that medical opinion is likely to give strongest support. The chief medical officer of the Board of Education is known to have the extension of the number of nursery schools greatly at heart, and apt quotations of words from his pen in praise of their activities formed a convenient weapon for the critics of Government policy. The arguments used by Mr. Trevelyan, Mr. P. Harris, and Lady Astor were not easy to answer and indeed no attempt was made to answer them. Instead the President emphasised his view that the chief problems of his department were the provision of better education for older children in the elementary schools and better opportunities for their further education when they left school. No one can deny the urgency of these needs, but they seem to be occupying him to the exclusion of those of the child at the other end of the scale. There are only 26 nursery schools in this country, accommodating 1367 children. Of these schools 11 were provided by private enterprise. The average proportion of diseased and delicate children entering elementary schools at the age of 5 is, according to Lady Astor, from 30 to 40 per cent., whereas among those who attend nursery schools the proportion is only 7 per cent. Statisticians might protest that the population at risk is so very much smaller in the latter group that the figures are hardly comparable; but the remarkable difference in health and nutrition of children who have been under constant supervision from infancy to school age is not in dispute. The gap in medical supervision between the infant welfare centres and the elementary schools is responsible for the development of certain diseases which are very much more expensive to cure than to prevent. Since 1918, when special provision was made for the establishment of nursery schools, local authorities have been slow to take advantage of their powers to establish them. More active encouragement from the Board of Education will be necessary.

"RHODIAN" CIGARETTES.

WE have received from Messrs. Lambert and Butler a sample of cigarettes made exclusively from Rhodesian-grown tobacco which they claim to be the first "all-British" cigarette. The methods of producing Rhodesian tobacco have greatly improved in the last few years and the "Rhodian" cigarettes have a flavour which many will appreciate. They are slightly larger in size than the average cigarette and are put up in popular boxes of 10 and 20.

The Past in Picture.—To-day (Friday), at 3 P.M., an exhibition of Naval, Military, and Historical Pictures will be opened at the Parker Galleries, 28, Berkeley-square, Mayfair, London, by Earl Beatty, and will remain open daily from 10 A.M. till 6 P.M., except on Saturdays, when it will close at 1 P.M. A well-illustrated booklet forms an introduction to the collection.